

APPENDIX D



Bid Items

APPENDIX D

BID ITEMS

SECTION #	DESCRIPTION	MEASURE	PAYMENT
02 20 01	Construction Stakeout: This Work shall consist of furnishing, placing and maintaining construction layout stakes as specified in the Contract Documents or as directed by the Engineer. The Contractor shall, as part of the construction stakeout operation, before any clearing operation commences, demarcate any wetlands and the limit of clearing throughout the entire project as shown in the Contract Documents and labeled as limit of clearing or wetlands to the satisfaction of the Engineer. Where limits of clearing are not shown in the Contract Documents, the limit of clearing will be the top of cut, toe of slope or limit of ditch excavation.		
	Construction Stakeout will not be measured but will be paid for at the Contract lump sum price. The payment will be full compensation for furnishing, placing and maintaining construction layout stakes, flagging of clearing limits and wetlands, and for all material, labor, equipment, tools, and incidentals necessary to complete the Work. Payment of the Contract lump sum price will be prorated and paid in equal amounts on each monthly estimate. The number of months used for prorating will be the number estimated to complete the Work.	No	LS
02 32 13	Subsurface Drilling and Sampling: This Work shall consist of drilling test holes in rock or other foundation material as a means of verifying the character and suitability of material for foundation purposes.		
	Subsurface drilling will be measured and paid for at the Contract Unit Price per linear foot for the actual total length of holes drilled. The payment will be full compensation for the geologist or geotechnical engineering services, and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.	LF	UP
02 41 13.13	Paving Removal: This Work shall consist of milling the hot mix asphalt (HMA) pavement to the depth and locations specified in the Contract Documents or as directed by the Engineer.		
	Milling Hot Mix Asphalt Pavement will be measured and paid for at the Contract Unit Price per square yard. The square yard measurement will be computed from the actual width and length measurements of the area that has been milled. The payment will be full compensation for milling, the disposal of milled material, and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.	SY	UP
	Filling depressions and potholes, and wedging manholes, valves boxes, inlets, or other structures, using hot mix asphalt will be measured and paid for as Hot Mix Asphalt Patches at the Contract Unit Price per ton. The payment will be full compensation for all tack coat, crack filler, hauling, placing, compacting, maintaining, removal, rehandling, reworking and disposal, and also for all material, labor, equipment, tools, and incidentals necessary to complete the Work. When hot mix asphalt is part of any base or pavement course used for the construction and maintenance of temporary detours, approaches, crossings, and widenings, the item of Work will be measured and paid for in conformance with 32 12 16.	Ton	UP
	Hot Mix Asphalt Patches will be measured and paid for as specified in 32 01 17.59, (Hot Mix Asphalt Patch).	As Specified	As Specified

02 41 13.14	Minor Select Site Demolition: This Work shall consist of removing all or part of existing concrete, concrete block, brick or stone structures (headwalls, toe walls, etc.), including concrete piles as specified in the Contract Documents or all such masonry as may interfere with new Work or as directed by the Engineer. Removal of existing bridge structures shall conform to 02 41 16.33 (Bridge Demolition and Disposal). Payment will be full compensation for all excavation, backfill, disposal of excess or unsuitable material, blasting, and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.		
	Removal of existing masonry will not be measured but will be included in the Contract lump sum price.	No	LS
	When specified in the Contract Documents, removal of existing masonry will be measured and paid for at the Contract Unit Price per cubic yard based on the volume of masonry actually removed and calculated by the method of average end areas. No measurement will be made for isolated piles of materials after same has been removed from its original position.	CY	UP
	As old masonry is frequently of irregular or unknown dimensions, Contractor and Engineer shall agree upon the dimensions as cross sections are taken. No measurement will be made for isolated piles of materials after same has been removed from its original position.	No	No
	No measurement will be made for excavation necessary for access to remove the masonry unless said excavation occurs within the normal limits for structure excavation.	No	No
	When a new structure is placed in the location of an existing structure, the removal of the existing structure will be incidental to the new structure unless otherwise specified.	No	Incidental
02 41 13.16	Removal of Existing Pavement, Sidewalk, Paved Ditches, Curb, or Combination Curb and Gutter: This Work shall consist of the full depth removal and disposal of existing pavement, sidewalk, paved ditches, and curb or combination curb and gutter as specified in the Contract Documents or as directed by the Engineer. Payment will be full compensation for all Work specified regardless of the type or depth of material removed and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.		
	Removal of existing pavement, sidewalk, paved ditches, curb or combination curb and gutter, and full depth saw cuts within the limits of any class of excavation will not be measured but the cost will be incidental to the Contract Unit Price for the class of excavation in which it occurs.	Incidental	UP
	When the existing sidewalk is removed and replaced with a new sidewalk, the cost to remove the existing sidewalk will be incidental to the Contract Unit Price for sidewalk.	Incidental	UP
	Saw cuts, removal of existing pavement, sidewalk, paved ditches, and curb or combination curb and gutter outside the limits of any class of excavation will be measured in the original position and paid for as follows:	Specified in 1, 2 or 3	Specified in 1, 2 or 3
	1. Saw cuts per linear foot when specified in the Contract Documents.	LF	UP
	2. Removal of existing pavement, sidewalk, and paved ditches per cubic yard.	CY	UP
	3. Removal of existing curb or combination curb and gutter per linear foot.	LF	UP
	When any material included in PART 4, D, (2) or D, (3) is removed but not replaced, the area shall be backfilled and landscaped as directed by the Engineer. All costs will be incidental to the Contract Unit Price for the pertinent items specified in the Contract Documents.	Incidental	UP

02 41 16.13	Building Demolition and Disposal: This Work shall consist of the removal and disposal of existing buildings, including foundations, footings or any part thereof, and backfilling, as specified in the Contract Documents. The Work also includes protection of the buildings until the removal and disposal are completed as directed by the Engineer. Locations of buildings included in the Work will be designated in the Contract Documents by the circled numbers etc.		
	Removal and disposal of existing buildings will not be measured but will be paid for at the Contract lump sum price. The payment will be full compensation for all material, labor, equipment, tools, and incidentals necessary to complete the Work.	No	LS
	All buildings not designated for removal and disposal in the Contract Documents will not be measured but the cost will be incidental to 31 11 00 (Clearing and Grubbing).	No	Incidental
	The City reserves the right to eliminate from this item any or all buildings or structures. For each building eliminated from this item, the item will be credited to the extent of the cost eliminated, which will be determined from a breakdown submitted by the Contractor showing the tabulation of individual unit costs used in arriving at the Contract Price for this item. A breakdown of the Contract lump sum price for removal and disposal of existing buildings shall be submitted to the Engineer prior to beginning Work.	NA	NA
02 41 16.33	Bridge Demolition: This Work shall consist of removal and disposal or salvage, wholly or in part, of existing structures in accordance with these Specifications and in reasonably close conformity with the lines, grades, and details shown on the Plans or as established by the Engineer. The payment will be full compensation for all excavation, backfill, saw cuts, professional Engineer services, temporary protective shields, temporary sheeting and shoring, hauling, disposal, and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.		
	Construction fence used to restrict access under demolition areas will not be measured but the cost will be incidental to the pertinent removal of existing structure item. When an item for construction fence is included in the Contract Documents, that portion of the construction fence used to protect demolition areas will not be included in the measurement and payment for that item.	No	Incidental
	The removal of existing structures will not be measured for payment but will be paid for at the pertinent Contract lump sum price.	No	LS
	Removal of existing structures for which no specific pay item is included in the Contract Documents will not be measured but the cost will be incidental to other pertinent items specified in the Contract Documents.	No	Incidental
	When the item removal of existing bridge is specified in the Contract Documents, the item will not be measured for payment but will be paid for at the Contract lump sum price. The payment will be full compensation for the removal of the structure, substructure, piles, supports, cribbing, grillage, salvage or disposal, and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.	No	LS

03 01 30.41	Maintaining Existing Bridge Deck During Life of Contract: This Work shall consist of patching the existing bridge deck as specified in the Contract Documents or as directed by the Engineer.		
	Patching for Maintaining Existing Bridge Deck will be measured and paid for at the Contract Unit Price per square foot. The payment will also be full compensation for the removal of material required to prepare the patch area, including chipping and hand cleaning, as well as furnishing and placing reinforcement steel, forming, providing protective structures, and furnishing, placing and removing any steel plates. Patches performed day or night will be paid for at the Contract Unit Price.	SF	UP
	All Work, materials, sequence of operations and cones required to maintain traffic during each occurrence of patching including removal after patching is complete, will be measured and paid for at the Contract Unit Price per each item. When more than one (1) patch is made under one movement of traffic for patching, the item will be paid for only once, regardless of the number of patches made or the length of time traffic is rerouted. When traffic must be maintained more than once for a particular patching operation, the Work will be measured and paid for only once.	EA	UP
	Floodlighting will not be paid for unless approved by the Engineer in writing. When floodlighting is approved, it will be measured and paid for at the Contract unit price per each night used, including fuel, backup generator, setup, relocation, and removal.	EA	UP
03 15 13	Damp Proofing and Waterproofing: This Work shall consist of damp proofing and waterproofing of concrete. surfaces		
	Damp proofing and membrane waterproofing will not be measured but the cost will be incidental to other pertinent items specified in the Contract Document.	No	Incidental
03 15 14.01	Expansion Joints in Structures: This Work shall consist of furnishing, fabricating, and installing preformed joint fillers, preformed elastomeric joint seals, troughs, structural steel and metal plates to be utilized in providing expansion and contraction capabilities in structures as specified in the Contract Documents. The payment will be full compensation for furnishing, fabricating, placing, etc., of structural steel, roadway seals, drainage troughs, catch basins, downspouts, cleaning, painting, and all material, labor, equipment, tools and incidentals necessary to complete the Work.		
	Joints in structures will not be measured but the cost will be incidental to the pertinent Superstructure concrete item.	No	Incidental
	When modifying existing bridge roadway joints is included in the Contract Documents, the cost of furnishing, fabricating, placing, etc., of new structural steel, new roadway seals, modifying existing joints on bridge roadway including saw cutting and removal of existing concrete, new concrete, steel plates, cutting of existing steel, welding, drainage troughs, catch basins, downspouts, etc., shall also be included in the Contract unit price per linear foot for the item. The measurement will include the horizontal distance from the inside face to inside face of parapets plus the vertical distance of the curb faces and parapets.	LF	UP
	When drainage trough for bridges is included in the Contract Documents, the furnishing and placing of drainage troughs including catch basins, downspouts, structural steel and hardware will be measured and paid for at the pertinent Contract unit price per linear foot. This price will include cutting of angles, painting, drilling of concrete, expansion bolts, etc. The measurement will be the centerline distance from end to end of the installed drainage trough fabric.	LF	UP
03 15 15	Bearing and Expansion Pads: This Work shall consist of furnishing and installing bearings of the type and size specified in the Contract Documents or as directed by the Engineer.		
	Bearings will not be measured but the cost will be incidental to other pertinent items specified in the Contract Document	No	Incidental
03 15 16	Application of Bridge / Structure Numbers		
	Application of Bridge/Structure Numbers will not be measured but the cost will be incidental to the pertinent items specified in the Contract Documents.	No	Incidental

03 21 00	Reinforcing Steel: This Work shall consist of furnishing and placing reinforcement, including deformed steel bars, wire mesh, and plain round steel spiral bars, as specified in the Contract Documents or as directed by the Engineer. Reinforcement shall be uncoated or epoxy coated as specified in the Contract Documents. Payment will be full compensation for cleaning, coating, and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.		
	Reinforcement steel bars or epoxy coated reinforcement steel bars will not be measured but the cost will be incidental to other pertinent items specified unless an item for reinforcement steel bars appears in the Contract Documents.	No	Incidental
	Reinforcement steel bars or epoxy coated reinforcement steel bars will not be measured but will be paid for at the pertinent Contract lump sum price.	No	LS
	Reinforcement steel bars or epoxy coated reinforcement steel bars will be measured and paid for at the Contract Unit Price per pound based on the original approved overall lengths of bars computed on the basis of the nominal unit weight per linear foot.	Per LB	UP
	Incorporating existing reinforcing steel in the final structure including straightening, bending, splicing, and removal and replacement will not be measured but the cost will be included in the pertinent concrete item.	No	Incidental
	Wire mesh reinforcement will not be measured but the cost will be incidental to other pertinent items specified.	No	Incidental
03 30 00	Portland Cement Concrete Structures: This Work shall consist of constructing concrete structures or portions of structures including the furnishing, transporting, mixing, placing, curing, and finishing of the portland cement concrete and protecting the structures as specified in the Contract Documents or as directed by the Engineer. Portland cement concrete structures will be measured and paid for as specified. Payment will be full compensation for all forms and form removal, reinforcement steel, curing and misting, scuppers, grooving, mechanical and electrical Work, all cost incidental to the conducting of tests for oxygen content and presence of gases and applying mechanical ventilation to confined spaces, year built markings, and all material, labor, equipment (including safety equipment), tools and incidentals necessary to complete the Work.		
	Construction of drainage and weep holes, any pipe necessary, expansion material, flashing, damp proofing, membrane waterproofing, epoxy bonding compound, joints and their placement will not be measured but the cost will be incidental to the concrete item. No deduction in concrete quantities will be made for pipes or conduits having diameters less than 8 inches, reinforcement steel, anchors, or any other appurtenances.	No	Incidental
	Portland cement concrete for substructure concrete for bridges, superstructure concrete for bridges, and reinforced concrete box culverts will not be measured but will be paid for at the Contract lump sum price. The cost for epoxy protective coated reinforcement steel shall be excluded from the Contract lump sum price for superstructure concrete for bridges. When a bridge deck rehabilitation project, other than bridge widenings, requires modification to the backwalls and wing walls and there is no substructure concrete item, the concrete will be incidental to the Superstructure Concrete item.	No	LS
	When a bridge deck rehabilitation project, other than bridge widenings, requires modification to the backwalls and wing walls and there is no substructure concrete item, the concrete will be incidental to the Superstructure Concrete item.	No	Incidental
	Wing walls and footings for reinforced concrete box culverts will not be measured but the cost will be incidental to the reinforced concrete box culvert item.	No	Incidental
	Parapets (including end posts) on bridges, wing walls, reinforced concrete box culverts and retaining walls, or concrete median barriers on bridges and top slabs of reinforced concrete box culverts will not be measured but will be paid for at the Contract lump sum price for the pertinent concrete parapet or concrete median barrier items.	No	LS

Cont'd

03 30 00 cont'd	Parapet and end post modifications on bridges, wing walls, reinforced concrete box culverts and retaining walls, or concrete median barriers on bridges and top slabs of reinforced concrete box culverts will not be measured but will be paid for at the Contract lump sum price for the pertinent parapet modification item. The payment will also include saw cutting, removal of portions of the existing parapet or end post, drilling, and grouting.	No	LS
	Floodlighting will be measured and paid for at the Contract Unit Price per each night used, including fuel, backup generator, setup, relocation, and removal.	EA	UP
	Linseed oil protective coating will be measured and paid for at the Contract Unit Price per square yard for the pertinent linseed oil protective coating item.	SY	UP
	Temporary supports or piling will not be measured but the cost will be incidental to the formwork.	No	Incidental
	Retaining walls will be measured and paid for as specified in 32 32 13, (Cast-in-Place Concrete Retaining Walls).	No	LS
03 30 43	Production Plants		
	Not applicable.	NA	NA
03 30 53.01	Miscellaneous Structures: This Work shall consist of constructing concrete structures or portions of structures including the furnishing, transporting, mixing, placing, curing, and finishing of the portland cement concrete and protecting the structures as specified in the Contract Documents or as directed by the Engineer. Payment will be full compensation for all excavation, concrete, masonry, special or precast units, reinforcement, ladder rungs, drip stones, No. 57 aggregate, underdrain stubs, frames, grates and covers, grade and slope adjustments, backfill and for all material, labor, equipment, tools, and incidentals necessary to complete the Work		
	Standard inlets and manholes specified in the Contract Documents will be measured and paid for at the Contract Unit Price per each.	EA	UP
	When a structure exceeds the standard minimum depth specified in the Contract Documents, an additional payment will be made for the excess depth at the Contract Unit Price per linear foot for the pertinent vertical depth item.	LF	UP
	Standard end walls, headwalls, end sections and special structures will be measured and paid for at the Contract Unit Price per each.	EA	UP
	Nonstandard end walls and other miscellaneous structures such as steps, spring boxes, and junction boxes, constructed using brick masonry or concrete will be measured and paid for at the Contract Unit Price per cubic yard unless otherwise specified in the Contract Documents.	CY	UP
	No separate or additional measurement will be made for any precast concrete units, metal or castings used in the construction of any of the items noted above.	No	Incidental
	Cleaning existing inlets will be measured and paid for at the Contract Unit Price per each, regardless of type, size, or depth of the inlet.	EA	UP
	When an existing drainage structure is to be removed and replaced with a new drainage structure in the same location, the cost to remove the existing drainage structure and a section of the existing pipe will be incidental to the cost of the new drainage structure.	No	Incidental

03 31 16	Lightweight Superstructure Concrete: This Work shall consist of constructing the lightweight concrete portions of the structure as specified in the Contract Documents. Lightweight concrete structures will be measured and paid for as specified. Payment will be full compensation for all forms and form removal, reinforcement steel, curing and misting, scuppers, mechanical and electrical Work, all cost incidental to the conducting of tests for oxygen content and presence of gases and applying mechanical ventilation to confined spaces, year built markings and for all material, labor, equipment (including safety equipment), tools, and incidentals necessary to complete the Work.		
	Construction of drainage and weep holes, any pipe necessary, expansion material, flashing, damp proofing, membrane waterproofing, epoxy bonding compound, joints and their placement will not be paid for but the cost will be incidental to the lightweight concrete item. No deduction in lightweight concrete quantities will be made for pipes or conduits having diameters less than eight inches (8"), reinforcement steel, anchors, or any other appurtenances.	No	Incidental
	Lightweight Superstructure Concrete will not be measured but will be paid for at the Contract lump sum price unless otherwise specified in the Contract Documents.	No	LS
	Lightweight concrete parapets and median barriers will not be measured but will be paid for at the Contract lump sum price for the pertinent Lightweight Concrete Parapet or Lightweight Concrete Median Barrier items.	No	LS
	Floodlighting will be measured and paid for as specified in the 03 30 00, Part 4, (Portland Cement Concrete Structures).	EA	UP
	Linseed Oil Protective Coating will be measured and paid for as specified in the 03 30 00, Part 4, (Portland Cement Concrete Structures)	SY	UP
03 31 27	Latex Modified Concrete Overlay for Bridge Decks: This Work shall consist of removing a specified amount of the existing bridge deck mechanically or through hydromilling, removal of additional areas of deteriorated concrete, cleaning all surface areas to be overlaid, replacing deteriorated reinforcement steel and placing latex modified concrete (LMC), as specified in the Contract Documents. The payment will be full compensation for all removing and cleaning, abrasive blasting, air blasting, flushing with water, forming, curing, disposal of material removed, and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.		
	Removal and disposal of existing wearing surface from bridge will be measured and paid for at the Contract Unit Price per square yard for the actual surface area removed from the bridge deck.	SY	UP
	Removal to the depth specified in the Contract Documents will be measured and paid for at the Contract Unit Price per square yard for the pertinent removal of portions of existing concrete bridge deck item.	SY	UP
	Deck repairs will be measured and paid for at the Contract Unit Price per square yard for the pertinent type deck repair item. Payment shall also include full compensation for the repair material.	SY	UP
	Furnishing, placing, finishing and curing of the LMC overlay, will be measured and paid for at the Contract Unit Price per square yard for the pertinent Latex Modified Concrete Overlay item. The actual areas placed, finished and cured will be measured, exclusive of areas of metal expansion dams exposed on the finished surface.	SY	UP
	Repair bar for deck reinforcement will be measured and paid for at the Contract Unit Price per linear foot.	LF	UP
	When traffic bearing surfaces are required, supplying and removal of them and any repairs of damage to existing deck will not be measured but the cost will be incidental to other pertinent items specified in the Contract Documents.	No	Incidental
03 37 00	Pneumatically Placed Concrete: This Work shall consist of removing existing concrete, and furnishing and placing pneumatically applied mortar as specified in the Contract Documents or as directed by the Engineer.		
	Pneumatically Applied Mortar will be measured and paid for at the Contract Unit Price per cubic foot of mortar in place. The payment will be full compensation for inspections, removal of existing concrete, abrasive blasting, and furnishing all cement, sand, water, test panels, drilled holes, reinforcement bars, wire mesh, mortar, expansion bolts, cores, storage, and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.	CF	UP

APPENDIX D

BID ITEMS

03 41 00	Precast Structural Concrete: This Work shall consist of furnishing and placing all prestressed concrete beams and slab panels, elastomeric bearing pads, bearing plates and embedded items, all steel strands, jacks, and other devices required to provide in place the finished member in conformance with the Documents.		
	Prestressed concrete members will not be measured but will be paid for at the Contract lump sum price for the pertinent Prestressed Concrete Beams or Prestressed Concrete Slab Panels item. The payment will be full compensation for all concrete, forms, reinforcement, bearing pads, steel strands, sheathing, steel components, steel rods, inserts, grout, bearing pads, epoxy adhesive, testing, furnishing and applying concrete protective coatings when specified, transporting, storage, erection, and for all material, labor, equipment, tools and incidentals necessary to complete the Work.	No	LS
03 47 12	Concrete Ditches: This Work shall consist of constructing concrete ditches and incidental toe walls as specified in the Contract Documents or as directed by the Engineer. Payment will be full compensation for all concrete, excavation, forms, backfill, curing, disposal of excess or unsuitable material, toe walls, and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.		
	Concrete Ditches will be measured and paid for at the Contract Unit Price per square yard.	SY	UP
	The removal and disposal of unsuitable material below the subgrade will be measured and paid for at the Contract Unit Price per cubic yard for Class 2 Excavation. The payment will include the cost of replacing the unsuitable material with suitable material acceptable to the Engineer, except as specified below.	CY	UP
	When Borrow or Selected Backfill using No. 57 aggregate or selected backfill using crusher run aggregate CR-6 is approved by the Engineer as replacement material for the Class 2 excavation, it will be measured and paid for at the Contract Unit Price per cubic yard for the pertinent items as specified in the Contract Documents.	CY	UP
	Concrete ditches removed but not replaced will be paid for at the Contract Unit Price per square yard. The payment will include the cost to dispose of the material, re-grading, topsoil, and soil stabilization matting.	SY	UP
03 62 00.01	Non-shrink Grouting: This Work shall consist of drilling holes in existing masonry for grouting of bars, bolts or anchorages, as specified in the Contract Documents or as directed by the Engineer.		
	Drilled Holes in Existing Masonry will be measured and paid for at the Contract Unit Price per linear foot of drilled holes. The payment will be full compensation for all material, labor, equipment, tools, and incidentals necessary to complete the Work.	LF	UP
	Inserts required for insertion in these holes will not be measured but the cost will be incidental to other pertinent items specified in the Contract Documents	No	Incidental
	Drilled holes for which no specific pay item is included in the Contract Documents will not be measured but the cost will be incidental to the other pertinent items specified in the Contract Documents.	No	Incidental
04 20 00.01	Repointed Masonry: This Specification covers the re-pointing of existing masonry structures with cement mortar.		
	This item will not be measured, as it will be paid for on a lump sum basis for repointed masonry, which payment shall be full compensation for all labor, materials, equipment and incidentals necessary to complete the Work, including curing and hot or cold weather protection.	No	LS
04 21 13	Brick Masonry: This Work shall consist of brick laid in full beds of mortar and built to the shapes and dimensions and at the locations specified in the Contract Documents or as directed by the Engineer. The payment will be full compensation for all sample panels, dovetail anchors, curing and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.		
	Brick Masonry for Structures will be measured and paid for at the contract Unit Price per square foot	SF	UP
	Brick Masonry for Structures will be measured and paid for at the Contract Unit Price per cubic yard.	CY	UP
	Brick Masonry for Structures will not be measured but will be paid for at the Contract lump sum price.	No	LS
	Brick Masonry Facing will be measured and paid for at the Contract Unit Price per square foot, or	SF	UP
	Brick Masonry Facing will not be measured but be paid for at the Contract lump sum price.	No	LS

04 43 00.01	General Requirements for Stone Masonry: The Specifications under this article cover the general requirements for construction procedure for stone masonry		
	Stone masonry shall be measured and paid for as described for the particular class of masonry specified.	As Specified	As Specified
04 43 00.02	Class "A" Cement Rubble Masonry and Class "A" Cement Rubble Masonry Facing: This item covers classes of masonry commonly known as coursed, random and random range Work composed of roughly squared and dressed stone laid in cement mortar. When the structure is composed entirely of stone this item shall be known as "Class 'A' Cement Rubble Masonry" and when the structure is faced with stone it shall be known as "Class 'A' Cement Rubble Masonry Facing.". Payment shall be full compensation for all labor, materials, equipment and incidentals necessary to satisfactorily complete the item as specified, including anchors, cramps, dowels, etc., the sample wall, weep holes and any pre-cast architectural stone or concrete for which no other basis of payment is provided. This item will be measured by one of the methods described below, depending on the stipulations of the Plans or Special Provisions or the method indicated by the Proposal. Pre-cast architectural stone or concrete shall be included in the quantities along with the other stone when measured by any of the following methods unless otherwise noted on the Plans or in the Special Provisions and provided for in the Proposal. Deductions from volume or surface measurements will be made for all openings except those specifically excluded.		
	The item of "Class 'A' Cement Rubble Masonry" or "Class 'A' Cement Rubble Masonry Facing" will not be measured but is to be completed in its entirety as specified and as shown on the Plans.	No	As Specified
	The item of "Class 'A' Cement Rubble Masonry" will be measured on the basis of the volume of the Work satisfactorily completed and accepted, including copings, determined from measurements made by weighing the material and such weights will be converted to cubic yards for payment purpose. The Engineer will determine factors for conversion from weight measurement to volume measurement. These conversion factors shall be agreed upon by the Contractor and the Engineer, prior to the approval of pay quantities by the Engineer.	CY	UP
	The item of "Class 'A' Cement Rubble Masonry Facing" will be measured on the basis of the exterior surface area of the facing as projected on planes parallel to the principal surfaces. This will exclude from the surface measurements such items as the tops of walls, copings and bridge seats, faces of ornamentation which do not show when projected on planes parallel to the principal surfaces, ends of stones at corners, except that where masonry facing continues around a corner for more than the length of one (1) stone. This surface shall be projected on a new plane and measured.	SF	UP
	Sample walls will not be measured for payment. This item will be paid for on the basis of one of the following methods as indicated in the Special Provisions or Proposal.	As specified	As specified
	1. The Contract lump sum price for "Class 'A' Cement Rubble Masonry" or "Class 'A' Cement Rubble Masonry Facing."	No	LS
	2. The Contract unit price for cubic yard for "Class 'A' Cement Rubble Masonry."	CY	UP
	3. The Contract unit price per square foot for "Class 'A' Cement Rubble Masonry Facing."	SF	UP

04 43 00.03	Class "B" Cement Rubble Masonry: This Specification covers coursed or uncoursed masonry composed of roughly squared stones laid in cement mortar, as indicated on the Plans. Payment shall be full compensation for all labor, materials and incidentals necessary to satisfactorily complete the Work as specified, including any weep holes, special copings or architectural cast stone which may be required.		
	This item, according to the requirements of the Plans, or Special Provision or the method indicated in the Proposal, will either not be measured or will be measured on the basis of the volume of the Work satisfactorily completed and accepted, including copings, determined from measurements made by weighing the material and such weights will be converted to cubic yards for payment purposes. Factors for conversion from weight measurement to volume measurement will be determined by the Engineer and shall be agreed to by the Contractor before such method of measurement of pay quantities will be approved by the Engineer.	No CY	LS or UP
	This item will be paid for as indicated in the Proposal, either on the basis of the Contract lump sum price or the Contract Unit Price per cubic yard for "Class 'B' Cement Rubble Masonry" measured as described above.	NO CY	LS or UP
04 43 00.04	Dry Rubble Masonry: Dry Rubble Masonry shall consist of roughly squared and dressed, approved rubble stone laid without the aid of mortar, so as to fit neatly and firmly together and it shall be constructed to the shapes and dimensions and at the locations as indicated on the plans or as directed in accordance with these Specifications. Payment shall be full compensation for all labor, materials and incidentals necessary to satisfactorily complete the Work as specified, including any mortared Work or special copings required.		
	This item, according to the requirements of the Plans or Special Provisions or the method indicated in the Proposal, will either not be measured or will be measured on the basis of the volume of the Work satisfactorily completed and accepted, including copings, determined from measurements made by weighing the material and such weights will be converted to cubic yards for payment purposes. Factors for conversion from weight measurement to volume measurement will be determined by the Engineer and shall be agreed to by the Contractor and the Engineer, before such method of measurement of pay quantities will be approved by the Engineer.	No or CY	As Specified
	This item will be paid for, as indicated in the Proposal, either on the basis of the Contract lump sum price of the Contract Unit Price per cubic yard for 04 43 00.03, (Class 'B' Cement Rubble Masonry) measured as described.	No CY	LS or UP
05 05 13.01	Fusion Bonded Powder Coatings for Metal: This Work shall consist of furnishing and applying electrostatically applied fusion bonded powder coatings on metal surfaces as specified in the Contract Documents.		
	Fusion bonded powder coatings for metal will not be measured but the cost will be incidental to the pertinent items specified in the Contract Documents.	No	Incidental
05 12 00	Structural Steel Framing: plate girders, trusses, grillages, columns and bents, shoes, pedestals, castings, miscellaneous steel and all incidental structural steel as specified in the Contract Documents or as directed by the Engineer. Payment will be full compensation for all high strength bolts and lock-pin and collar fastener assembly testing, material, labor, equipment, tools, and incidentals necessary to complete the work.		
	Fabricated Structural Steel will not be measured but will be paid for at the Contract lump sum price.	No	LS
	Fabricated Structural Steel will be measured and paid for at the Contract Unit Price per pound computed on the theoretical weight.	LB	UP
	When a pay item for Fabricated Structural Steel is not specified in the Contract Documents, the fabricated structural steel will not be measured but the cost will be incidental to other pertinent items.	No	Incidental
	Rotational capacity testing for high strength bolt assemblies will not be measured but the cost will be incidental to the Contract Price for the Fabricated Structural Steel item or other pertinent items specified in the Contract Documents.	No	Incidental

05 41 00	Steel Stud Shear Developers: This Work shall consist of furnishing, fabricating and installing, complete in place, steel stud shear developers as specified in the Contract Documents or as directed by the Engineer. Payment will be full compensation for all material, labor, equipment, tools, and incidentals necessary to complete the work.		
	Steel stud shear developers will not be measured but will be paid for at the Contract lump sum price.	No	LS
	Steel stud shear developers for which there is no specific pay item included in the Contract Documents will not be measured but the cost will be incidental to other pertinent items specified in the Contract Documents.	No	Incidental
	Steel stud shear developers will be measured and paid for at the Contract Unit Price per each.	EA	UP
05 52 00	Metal Railing: This Work shall consist of furnishing, fabricating, coating and erecting of all metal railings as specified in the Contract Documents.		
	Method 1: Unless a pay item for "Metal Railing" is specifically set up in the Proposal, this item will not be measured but will be included in the Work to be done under a unit or lump sum price bid for another item.	No	LS
	Method 2: The item will not be measured but will be paid for on the basis of a lump sum for all metal railing on the project, or on the basis of a lump sum for all metal railing on each structural unit. Payments shall be full compensation for all labor, material, equipment and incidentals, including the furnishing, erecting, anchoring, galvanizing, and painting of the railing as necessary to complete the item in accordance with the provisions of the Plans and Specifications.	No	LS
	Method 3: The item will be measured for the actual number of linear feet of metal railings, satisfactorily completed and accepted, computed from measurements taken parallel to the base or foundation upon which railings are supported, unless otherwise shown on the Plans. Payment based on Contract Unit Price shall be full compensation for all labor, materials, equipment and incidentals, including the furnishing, erecting, anchoring, galvanizing and painting of the railing as necessary to complete the item in accordance with the provisions of the Plans and Specifications.	LF	UP
06 10 53	Miscellaneous Rough Carpentry: This Work shall consist of constructing structures or portions of structures using timber, including fabrication, erecting, treating and coating of the timber elements as specified in the Contract Documents or as directed by the Engineer. For timber piling refer to 31 62 00, (Driven Piles). For structural steel refer to "Structural Steel Framing" 05 12 00, (Structural Metal Framing-metal structures). For concrete refer to 03 30 00, (Portland Cement Concrete Structures). Payment will be full compensation for all timber (treated or untreated) storage and handling, preservative, composite shields, asphalt cement, metal components, drilling holes, and for all material, labor, equipment, tools, and incidentals necessary to complete the Work. Piles are excluded.		
	Timber structures will be measured and paid for at the Contract Unit Price per one thousand (1000) board feet "MBM". The computation of quantities will be based on the nominal sizes specified in the Contract Documents and the exact overall net length of pieces remaining in the completed structure. No allowance will be made for waste. If a lump sum Contract has been agreed to, the timber structures will not be measured.	No if or 1000 Board Feet	LS If UP
	Painting timber structures, when a pay item, will be paid for at the Contract lump sum price. When not a pay item, the cost thereof shall be included in the price for other appropriate pay items.	No	LS or Incidental

09 96 56	Epoxy Coatings: This Work shall consist of furnishing and applying epoxy protective coatings as specified in the Contract Documents or as directed by the Engineer. Payment will be full compensation for coats and all material, labor, equipment, tools, and incidentals necessary to complete the Work		
	Epoxy protective coatings for concrete for which no specific item is included in the Contract Documents will not be measured but the cost will be incidental to other pertinent items included in the Contract Documents.	No	Incidental
	Epoxy protective coatings for concrete will not be measured but will be paid for at the Contract lump sum price for the pertinent Epoxy Protective Coating item.	No	LS
	Epoxy protective coatings for concrete will be measured and paid for at the Contract Unit Price per square yard for the pertinent Epoxy Protective Coating item.	SY	UP
09 97 13.23	Exterior Steel Coatings (Cleaning and Painting New Structural Steel): This Work shall consist of cleaning and painting new structural steel to be used for work such as new construction, deck widening, and repairs requiring the installation of new structural steel. When the existing steel is not scheduled for repainting, this Work shall also consist of repairing existing coatings damaged during the Contractor's operations, and where new steel ties into existing steel. When the existing steel is scheduled for repainting, the Work shall conform to 09 97 13.24, (Cleaning and Painting Existing Structural Steel). When the new or existing steel are prepared by abrasive blast cleaning in the field, the containment and environmental monitoring requirements of 09 97 13.24, (Cleaning and Painting Existing Structural Steel) shall apply. The Contract Unit Price for the item specified in the Contract Documents will be full compensation for all permits, Working Drawings, daily quality control records and professional engineer's services used for containment when required. Also, sampling and testing materials for heavy metal content including any revisions and resubmissions of the submittals that may be required during the execution of the Work and all other incidentals necessary to complete all cleaning and painting operations including providing safe access for inspections, flood lighting, test plates, drums, collection and storage at the temporary storage site, hauling and disposal at an approved industrial waste site or hazardous waste site, removal of debris and all material, labor, equipment (including test equipment), tools and incidentals necessary to complete the Work.		
	Cleaning and painting new structural steel will not be measured but the cost will be incidental to the pertinent Fabricated Structural Steel item.	No	Incidental
	Cleaning and painting existing structural steel will not be measured but will be paid for at the Contract lump sum price for the pertinent cleaning and painting item.	No	LS
	All costs associated with repair of existing coatings due to new connections and existing coatings damaged during steel/deck repairs will not be measured but will be incidental to the pertinent Repair, Structural Steel or Cleaning and Painting items included in the Contract Documents.	No	Incidental

09 97 13.24	Exterior Steel Coatings (Cleaning and Painting Existing Structural Steel): This Work shall consist of cleaning and painting existing structural steel in the field. The Work includes partial cleaning and painting (zone painting or overcoating), complete cleaning and painting (total paint removal and replacement), and repairing existing coatings damaged during repairs or by the Contractor's operations on or adjacent to the bridge. The Work to be performed shall be as specified in the Contract Documents, these Specifications, and as directed by the Engineer. The Contract Unit Price for the item specified in the Contract Documents will be full compensation for all permits, Working Drawings, daily quality control records, professional engineer's services used for containment, industrial hygienist services, air monitoring, sampling and testing materials for lead and heavy metal content, including any revisions, resubmissions of the containment plan and systems that may be required during the execution of the Work, and all other incidentals necessary to complete all cleaning and painting operations including providing safe access for inspections, flood lighting, test plates, drums, collection and storage at the temporary storage site, hauling and disposal at an approved industrial waste site or hazardous waste site, removing and replacing planking, removal of debris, and all material, labor, equipment (including test equipment), tools, and incidentals necessary to complete the Work.		
	Cleaning and painting new structural steel will not be measured but the cost will be incidental to the pertinent Structural Steel or Repair item.	No	Incidental
	Cleaning and painting existing structural steel will not be measured but will be paid for at the Contract lump sum price for the pertinent Cleaning and Painting item.	No	LS
	All costs associated with repair of existing coatings due to new connections and existing coatings damaged during steel/deck repairs will not be measured but will be incidental to the pertinent Repair, Structural Steel, or Cleaning and Painting items included in the Contract Documents.	No	Incidental
10 14 15.01	Bridge Mounted Sign Supports: This Work shall consist of furnishing and constructing bridge mounted sign supports and sign luminaire supports as specified in the Contract Documents. The Work does not include sign panels, electrical Work, and luminaires.		
	Bridge Mounted Sign Supports will not be measured but will be paid for at the Contract lump sum price. The payment will be full compensation for all material, labor, equipment, tools, and incidentals necessary to complete the Work	No	LS
10 14 15.02	Concrete Foundations for Traffic Signals: This Work shall consist of constructing concrete foundations for installing traffic signals, highway lighting and signs at locations specified in the Contract Documents or as directed by the Engineer.		
	Concrete foundations for installing traffic signals, highway lighting and signs will be measured and paid for at the Contract Unit Price per cubic yard for the pertinent Concrete Foundation item. The payment will be full compensation for all concrete, excavation, corrugated metal pipe or forms, reinforcement steel, anchor bolts, backfill and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.	CY	UP
	When concrete barrier transitions, conduit and grounding are required, they will be measured and paid for as specified in 34 71 13.24 (Concrete Traffic Barriers), 10 14 15.03 (Galvanized Steel Beam Sign Posts), 10 14 15.04 (Overhead Sign Structures), 26 44 00 (Grounding), 26 07 01.01 (Electrical Conduit and Fittings), 34 41 16.08 (Traffic Control Device Cabinets and Equipment) and 34 41 13.10 (Signal Structures).	See referenced sections	See referenced sections
10 14 15.03	Galvanized steel beam sign posts: This Work shall consist of furnishing and installing galvanized steel beam signposts as specified in the Contract Documents or as directed by the Engineer.		
	Galvanized Steel Beam Sign Posts will be measured and paid for at the Contract Unit Price per linear foot for the various sizes of posts specified in the Contract Documents. The payment will be full compensation for stakeout, furnishing and installing the posts and for all material, labor, equipment, tools, and incidentals necessary to complete the Work	LF	UP
	Breakaway Base Support Systems, when specified in the Contract Documents, will be measured and paid for as specified in 10 14 15.08, (Breakaway Base Support Systems).	EA	UP

APPENDIX D

BID ITEMS

10 14 15.04	Overhead Sign Structures: This Work shall consist of furnishing and fabricating overhead sign structures and other appurtenances as specified in the Contract Documents or as directed by the Engineer. Sign panels, electrical Work, luminaires and foundations are excluded.		
	Overhead Sign Structures will be measured and paid for at the Contract Unit Price per each. The payment will be full compensation for all stakeouts, overhead sign structures, sign/luminaires supports, nuts and washers, and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.	EA	UP
10 14 15.05	Wood Sign Supports: This Work shall consist of furnishing and erecting wood sign supports as specified in the Contract Documents or as directed by the Engineer. Signs shall be as specified in 10 14 53, (Signs).		
	Wood Sign Supports will be measured and paid for at the Contract Unit Price per linear foot for the length and size specified in the Contract Documents. The payment will be full compensation for all excavation and backfill, drilled holes and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.	LF	UP
10 14 15.08	Breakaway Base Support Systems: This Work shall consist of furnishing and installing breakaway base support systems or installing City furnished breakaway base support systems as specified in the Contract Documents. The payment will be full compensation for all excavation, backfill, grading and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.		
	Breakaway Base Support Systems will be measured and paid for at the Contract Unit Price per each for breakaway support systems furnished and installed as specified in the Contract Documents.	EA	UP
	Installation of City supplied breakaway support systems will be measured and paid for at the Contract Unit Price per each.	EA	UP
	Transportation to and pick up of the City supplied components will not be measured but the cost will be incidental to this item.	No	Incidental
10 14 15.09	Remove and Relocate Existing Signs and Sign Structures: This Work shall consist of removing and relocating existing signs and sign structures as specified in the Contract Documents or as directed by the Engineer. Payment will be full compensation for removing and relocating existing signs and sign structures, removing existing concrete foundations, backfilling and compacting existing holes left after foundation removal and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.		
	Remove Existing Ground Mounted Signs and Supports will be measured and paid for at the Contract Unit Price per square foot area of sign.	SF	UP
	Removal of sign supports and concrete foundations will not be measured but the cost will be incidental to the Contract Unit Price for removing the signs.	No	Incidental
	Remove Signs from Existing Overhead Structure will be measured and paid for at the Contract Unit Price per square foot area of the sign.	SF	UP
	Removal of sign and sign luminaire supports, luminaires, conduit and cable will not be measured but the cost will be incidental to the Contract Unit Price for removing the signs	No	Incidental
	Relocate Existing Ground Mounted Signs will be measured and paid for at the Contract Unit Price per square foot area of the sign.	SF	UP
	Removal and disposal, or removal and relocation of the sign support will not be measured but the cost will be incidental to the Contract Unit Price for relocating the signs.	No	Incidental
	Relocate Signs from Existing Overhead Structure will be measured and paid for at the Contract Unit Price per square foot area of the sign. Removal and relocation of sign and sign luminaire supports and luminaires will not be measured but the cost will be incidental to the Contract Unit Price for relocating the signs.	SF	UP
	Removal and relocation of sign and sign luminaire supports and luminaires will not be measured but the cost will be incidental to the Contract Unit Price for relocating the signs.	No	Incidental
Cont'd			

10 14 15.09 cont'd	Remove Existing Cantilever or Overhead Sign Structure and Signs and Supports will be measured and paid for at the Contract Unit Price per each structure.	EA	UP
	Disconnecting the electrical service and removal of concrete foundations will not be measured but the cost will be incidental to the Contract Unit Price for removing the structure.	No	Incidental
	Concrete for sign foundation, galvanized steel beam sign posts, breakaway base support system for steel beams and wood sign supports for new sign supports, if required, will be paid for as specified in the applicable portions of 10 14 15.02 (Concrete Foundations for Traffic Signals), 10 14 15.03 (Galvanized Steel Beam Sign Posts), 10 14 15.05 (Wood Sign Supports) and 10 14 15.08 (Breakaway Base Support Systems).	See referenced sections	See referenced sections
10 14 53	Traffic Signs: This Work shall consist of furnishing and installing signs of sheet aluminum or extruded aluminum panels, all with a reflective or nonreflective sheeting background, and all direct applied or silk screened copy or demountable copy with bolts and fittings to erect the signs as specified in the Contract Documents or as directed by the Engineer. Sign supports shall be as specified in 10 14 15.03 (Galvanized Steel Beam Sign Posts), 10 14 15.04 (Overhead Sign Structures) and 10 14 15.05 (Wood Sign Supports). B The sign installation shall include clearing Work to provide for good sight distance.		
	Signs will be measured and paid for at the Contract Unit Price per square foot of area of the vertical front face of the completed sign with no deduction for required shaping. The payment will be full compensation for the mounting hardware and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.	SF	UP
	City furnished signs and mounting hardware will be measured and paid for at the Contract Unit Price per square foot for the completed sign installed. The payment will be	SF	UP
	Full compensation for all transportation, drilling holes as specified, installation, and for all materials, labor, equipment, tools, and incidentals necessary to complete the Work.	No	Incidental
	Clearing for signing will not be measured but the cost will be incidental to the Contract Unit Price for furnishing and installing signs.	No	Incidental
10 14 53.01	Traffic Control - Electrical Cable, Wire and Connectors: This Work shall consist of furnishing and installing loop detector wires and leads, electrical cable, cable ducts, wire, micro-loop probe sets, communication cable and associated connectors of the type and at the locations specified in the Contract Documents, or as directed by the Engineer, for traffic control. A The payment will be full compensation for all cable, preassembled cable ducts, wire, lubricants, splices, overhead communication cable attachments, identification tags, trench excavation and backfill, and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.		
	Electrical Cable, Cable Ducts, Loop Detector Wire and Loop Detector Lead-in Cable, Grounding Wire and Communication Cable will be measured and paid for at the Contract Unit Price per linear foot for the type and sizes specified in the Contract Documents.	LF	UP
	Connector Kits will be measured and paid for at the Contract Unit Price per each type.	EA	UP
	Micro-Loop Probe Sets will be measured and paid for at the Contract Unit Price per each set. The payment will be full compensation for all sealant, PVC conduit, hole drilling, installation of lead-in cable, and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.	EA	UP
	Saw cuts for loop detector wire and micro-loop probe sets will be measured and paid for as specified in 34 01 13.15, (Saw Cuts for Traffic Control Devices).	LF	UP

10 14 53.10	Modify Existing Sign messages: This Work shall consist of removing and adding new sign copy, shields and arrows for existing signs, or overlaying existing sign messages as specified in the Contract Documents or as directed by the Engineer. Payment will be full compensation for all cleaning, material, labor, equipment, tools, and incidentals necessary to complete the Work.		
	Modify Message on Existing Ground Mounted or Overhead Signs will be measured and paid for at the Contract Unit Price per each removed or each installed character for the type of sign installation specified. Characters include shields, arrows and sign copy.	EA	UP
	Overlay Existing Ground Mounted or Overhead Signs will be measured and paid for at the Contract Unit Price per square foot, removed or installed for the type of sign specified.	SF	UP
10 14 53.23	TEMPORARY TRAFFIC SIGNS (TTS): A. This Work shall consist of furnishing and installing Temporary Traffic Signs on or along any transportation facility as specified in the Contract Documents. The Contractor shall maintain sign faces free of tape, tape residue or any other foreign matter and shall remove any advertisements from signs and supports. Supplemental signs shall not cover any part of the face of the primary sign.		
	Temporary traffic signs will be measured and paid for at the Contract Unit Price per square foot for the pertinent Temporary Traffic Sign item. The payment will be full compensation for furnishing the signs and supports, wood posts, erection, relocation, maintenance, cleaning, replacement due to non-traffic damage or normal wear, removal and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.	SF	UP
	Where signs have been set and are subsequently damaged by traffic and the Engineer determines that they are not repairable, they shall be replaced and will be measured and paid for at the Contract Unit Price.	SF	UP
	Temporary traffic signs and all associated hardware, fittings, posts, brackets and incidentals shall be removed from the project site when no longer needed and become the property of the Contractor.	No	Incidental
10 14 53.33	Modification of Existing Signs: This Work shall consist of relocating, removing, covering, modifying, re-erecting or changing existing highway signs relating to the construction activity. This Work is in addition to the temporary traffic signs specified in 10 14 53.23, (Temporary Traffic Signs (TTS)).		
	Modification of existing signs will be measured and paid for using one (1) or more of the items below and specified in the Contract Documents. The payment will be full compensation for all excavation, backfill, hardware, relocation, removal, covering, modifying, re-erecting, changes to existing highway signs, and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.	As specified below	As specified below
	1. Relocate Wood Sign Supports per each support.	EA	UP
	2. Sign Modifications to Overhead Sign Structures per square foot.	SF	UP
	3. Relocate Sign per square foot.	SF	UP
	4. Remove Sign per square foot.	SF	UP
	5. Modify Copy per each character.	EA	UP
	6. Install or Remove Shield per each.	EA	UP
	7. Cover Sign per square foot.	SF	UP
	8. Relocate Sign Luminaries per each.	EA	UP

10 14 63.11	Portable Variable Message Signs (PVMS): This Work shall consist of furnishing and installing portable, self-contained, trailer mounted, variable message signs as specified in the Contract Documents or as directed by the Engineer. The payment will be full compensation for the installation, sign, diesel generator, all fuel and refueling, electrical power and hook up, setup and maintenance of computer programs, changing messages, relocating as required by the Traffic Control Plan or as directed by the Engineer, and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.		
	The Portable Variable Message Sign will be measured and paid for at the Contract Price per unit day. A unit day shall consist of any approved usage within a twenty four (24) hour day period. Each Portable Variable Message Sign will be paid for only once per unit day, regardless of how many times it is relocated. When a unit is used for part of a day, it will be measured as a unit day. This unit price will be the same regardless of the type of unit used.	Per Day	UP
10 14 63.12	Arrow Panels (AP): This Work shall consist of furnishing and placing Arrow Panels (see specifications) for temporary use. Arrow Panels shall supplement, but not replace, standard signing as specified in the Contract Documents. The payment will be full compensation for all material, labor, equipment, tools, incidentals required to set up and operate at the site as required and at any relocated site as required by the Traffic Control Plan or as directed by the Engineer.		
	Arrow Panels will be measured and paid for at the Contract Price per unit day. A unit day shall consist of any approved usage within a twenty four (24) hour calendar day period. Each Arrow Panel will be paid for only once per unit day, regardless of how many times it is relocated. When an arrow panel is used for part of a day, it will be measured and paid for as a unit day.	Per Day	UP
13 22 00	Engineer's Office: This Work shall consist of furnishing, cleaning and maintaining in good condition an Engineer's office at a location within the immediate vicinity of the project and approved by the Engineer. The Engineer's office shall be separated from any offices used by the Contractor and it and all items therein shall be for the exclusive use of the City's Engineers and Inspectors. Rented properties that conform to the type of office specified in the Contract Documents will be acceptable. Payment will be prorated over the number of months estimated to complete the work.		
	Engineer's office will not be measured but will be paid for at the Contract lump sum price for the pertinent Engineer's Office specified in the Contract Documents. The payment will be full compensation for site preparation, utility costs, all specified furnishings, to provide equipment, clean, maintain, insure, remove and dispose of the office, restore the site and for all material, labor, equipment, tools and incidentals necessary to complete the Work.	No	LS
13 34 12	General Mechanical Requirements for Facilities Projects:		
	General mechanical requirements will be paid as part of the Contract lump sum price.	No	LS
23 05 93	HVAC Testing, Adjusting and Balancing: Furnish labor, materials, equipment and services to store, transport, install, calibrate, and make operational the HVAC System.		
	All items will be paid for at the Contract lump sum price. The payment will be full compensation for all material, labor, equipment, tools, and incidentals necessary to complete the Work.	No	LS
25 13 13.01	General SCADA System Requirements: This section describes the general requirements for Supervisory Control and Data Acquisition (SCADA) System hardware, software, and implementation standards.		
	Furnish labor, materials, equipment and services to store, transport, install, calibrate, and make operational the SCADA System. Include wiring, raceway, fittings and connections to link the individual components into an integrated SCADA System. All items will be paid for at the Contract lump sum price. The payment will be full compensation for all material, labor, equipment, tools, and incidentals necessary to complete the Work.	No	LS

25 13 13.02	System Integration: The Contractor shall obtain the services of a direct subcontractor who will be responsible for the coordination and integration of the entire instrumentation, process equipment and its control and associated signals into a completely functioning subsystem which will then seamlessly be interfaced into the existing plant system per this section.		
	Furnish labor, materials, equipment and services to store, transport, install, calibrate, and make operational the system. Include wiring, raceway, fittings and connections to link the individual components into an integrated system. All items will not be measured but be paid for at the Contract lump sum price. The payment will be full compensation for all material, labor, equipment, tools, and incidentals necessary to complete the Work.	No	LS
26 05 13	Facilities: Medium Voltage Electrical Power Conductors: This Section includes cables and related splices, terminations, and accessories for thirty four thousand five hundred (34,500) volt electrical distribution systems.		
	All items will be paid for at the Contract lump sum price. The payment will be full compensation for all material, labor, equipment, tools, and incidentals necessary to complete the Work.	No	LS
26 05 19	Facilities: Low Voltage Electrical Power Conductors and Cables: This section includes building wires and cables and associated splices, connectors, and terminations for wiring systems rated six hundred (600) volts and less.		
	All items will be paid for at the Contract lump sum price. The payment will be full compensation for all material, labor, equipment, tools, and incidentals necessary to complete the Work.	No	LS
26 05 20	Facilities: Electrical Testing and Inspection: Upon completion of the Work, the Contractor shall, in the presence of the Engineer, operate, test, adjust, and retest if necessary, the complete electrical system. The Contractor shall furnish all labor, material, supplies, equipment, instruments and power necessary for testing.		
	All testing will be paid for at the Contract lump sum price. The payment will be full compensation for all material, labor, equipment, tools, and incidentals necessary to complete the Work.	No	LS
26 05 23.01	Facilities: Control / Signal Transmission Media: This section includes the following types of control and signal transmission media, coaxial cable, twisted pair cable, video pair cable, optical fiber cable and optical fiber connectors and couplers.		
	All items will be paid for at the Contract lump sum price. The payment will be full compensation for all material, labor, equipment, tools, and incidentals necessary to complete the Work.	No	LS
26 05 30	Facilities: Basic Electrical Materials and Methods: This section includes raceways, fittings, boxes, enclosures, and cabinets for electrical wiring. Raceways include the following: Rigid metal conduit, flexible metal conduit, liquid tight flexible conduit, rigid nonmetallic conduit, wireway. Also, boxes, enclosures, and cabinets include the following: Device boxes, floor boxes, outlet boxes, pull and junction boxes, cabinets and hinged cover enclosures. Also, underground conduits and ducts, duct banks, manholes, and other underground utility structures.		
	All items will be paid for at the Contract lump sum price. The payment will be full compensation for all material, labor, equipment, tools, and incidentals necessary to complete the Work.	No	LS
26 05 31	Facilities: Instrumentation and Control for Electrical Systems: This section includes the furnishing and installation of instrumentation and controls for City Facilities. Analog, control, status, and alarm signals required for alarm, display and report generation shall be transmitted to the existing appropriate control panel as indicated on the Drawings.		
	All items will be paid for at the Contract lump sum price. The payment will be full compensation for all material, labor, equipment, tools, and incidentals necessary to complete the Work.	No	LS

26 07 01.01	Electrical Conduit and Fittings: This Work shall consist of furnishing and installing electrical conduit and fittings as specified in the Contract Documents or as directed by the Engineer. The requirements of 26 07 01.03, (General Electrical Work and Testing) shall be a part of this Specification. Payment will be full compensation for all excavation, backfill, conduit encasing concrete, hot mix asphalt, attachments, hangers, paint, bends, connections, fittings, mandrelling, pull ropes and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.		
	Electrical Conduit and Fittings and Electrical Conduit and Fittings Attached to Bridges will be measured and paid for at the Contract Unit Price per linear foot measured along the centerline of the conduit from end to end.	LF	UP
	Electrical hand holes, manholes, pull and junction boxes will be measured and paid for as specified in 26 07 01.02, (Electrical Hand Holes Manholes Pull and Junction Boxes).	EA	UP
	Electrical conduit and fittings and junction boxes to be constructed into concrete structures will not be measured but the cost will be incidental to the pertinent Concrete Traffic Barrier, Concrete Parapet, or other pertinent Concrete items specified in the Contract Documents.	No	Incidental
	Concrete Foundations will be measured and paid for as specified in 10 14 15.02, (Concrete Foundations for Traffic Signals).	CY	UP
26 07 01.02	Electrical hand holes, manholes, pull and junction boxes: This Work shall consist of furnishing and installing electrical hand holes, manholes, pull and junction boxes as specified in the Contract Documents or as directed by the Engineer.		
	Electrical Hand Holes, Manholes, and Pull and Junction Boxes will be measured and paid for at the Contract Unit Price per each unless otherwise specified in the Contract Documents. The payment will be full compensation for all excavation, aggregate drain, concrete, bolts, bricks, pipes, backfill, sealer, frames and covers, and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.	EA	UP
26 07 01.03	General Electrical Work and Testing: This Work shall consist of furnishing, installing, and testing of all applicable electrical items referred to in Divisions 10, 26 and 34.		
	General electrical Work and testing and the as built Drawings will not be measured but the cost will be incidental to the other pertinent items specified in the Contract Documents.	No	Incidental
26 07 01.04	Electrical Conduit Systems: This Work shall consist of furnishing and installing of single and multiple duct banks, conduit, fittings manholes, recessed extensions, hand boxes, junction and pull boxes, conduit in structures and incidental items necessary to provide for the type, size and location of a conduit system as indicated in the Contract Documents or Standards.		
	Conduit in trenches shall be measured on a linear foot basis. The quantity of each formation specified shall be the number of linear feet of each single or multiway duct section installed, measured in place complete, tested and accepted. Measurement shall be along the center line of the duct section from end to end, or to the inside face of the manhole or structure into which the duct enters.	LF	UP
	Conduit on structure not monolithically incorporated into the Construction shall be measured on a linear foot basis.	LF	UP
	Any conduit monolithically incorporated into the Construction of a new structure will not be measured but its cost shall be included in the appropriate structure item.	No	Incidental
	Pull and junction boxes will not be measured.	No	Incidental
	Roding of the existing duct for hand boxes shall be incidental to the cost of hand boxes.	No	Incidental
	Crusher run aggregate used in filling the additional space for a conduit separation will not be measured.	No	Incidental
	Hand boxes and manholes will be measured on a per/each basis.	EA	UP
	Recessed extensions will be measures on a per/each basis, except when cast with a poured in place manhole.	EA	Incidental
	Recessed extensions when cast in place with poured in place manhole they will not be measured but be incidental to the Work.	No	Incidental

26 27 01	Electrical Service Equipment: This Work shall consist of furnishing and installing electrical service equipment necessary for the utility company to connect the electrical power supply as specified in the Contract Documents or as directed by the Engineer and coordinating the connection with the local utility company.		
	Metered Service Pedestal will be measured and paid for at the Contract Unit Price per each. The payment will be full compensation for all enclosures, panel boards, circuit breakers, internal wiring, wiring devices, meter sockets, meter, shunts, cover plates, wiring and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.	EA	UP
	Electrical Service Distribution Cabinet will be measured and paid for at the Contract Unit Price per each. The payment will be full compensation for all enclosures, disconnect switches, lightning arresters, panel boards, circuit breakers, internal wiring, ground fault interrupter outlets, conduits, wiring devices, meter sockets, meter, shunts, cover plates, wiring and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.	EA	UP
	Meter Socket will be measured and paid for at the Contract Unit Price per each. The payment will be full compensation for attachment hardware, meter, shunts, cover plate, and for all material, labor, equipment, tools, and incidentals necessary to complete the Work. When an item for meter socket is not included in the Contract Documents, this Work will not be measured, but the cost will be incidental to other pertinent items.	EA	UP
	Disconnect Switch will be measured and paid for at the Contract Unit Price per each. The payment will be full compensation for attachment hardware, fuses, switch and for all material, labor, equipment, tools and incidentals necessary to complete the Work. When an item for this Work is not included in the Contract Documents, this Work will not be measured, but the cost will be incidental to other pertinent items.	EA	UP
	Underground conduit will be measured and paid for as specified in 26 07 01.01, (Electrical Conduit and Fittings).	LF	UP
	Service lateral cable will be measured and paid for as specified in 26 05 23.01, (Facilities Control Transmission Media).	No	LS
	Concrete foundation will be measured and paid for as specified in 10 14 15.02, (Concrete Foundations for Traffic Signals).	CY	UP
	Utility connection coordination with the utility company will not be measured, but the cost will be incidental to other pertinent items.	No	Incidental
	All utility company energization, connection or disconnection costs will be the responsibility of the City.	No	No
26 27 26	Wiring Devices: This Section includes various types of receptacles, connectors, switches, and finish plates.		
	All items will be paid for at the Contract lump sum price. The payment will be full compensation for all material, labor, equipment, tools, and incidentals necessary to complete the Work.	No	LS
26 40 00	Grounding: This Work shall consist of furnishing and installing grounding systems as specified in the Contract Documents or as directed by the Engineer. The grounding system shall conform to the latest editions of the National Electrical Code (NEC) and the National Electric Safety Code (NESC).		
	Ground Rods will be measured and paid for at the Contract Unit Price per each ten foot (10') length. The payment will be full compensation for all rods, lugs, driving rods, welding, excavation, backfill, and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.	EA 10 Foot length	UP
	Ground Wire will be measured and paid for as specified in 26 05 19, Part 4.	No	LS
26 50 01	Luminaires and Lamps: This Work shall consist of furnishing and installing luminaires and lamps. The requirements of 26 07 01.03, (General Electrical Work and Testing) shall be a part of this Specification.		
	Luminaires will be measured and paid for at the Contract Unit Price per each. The payment will be full compensation for luminaires, lamps, ballast, photocell, mounting hardware, and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.	EA	UP

26 50 02	Lighting - Conduit, Fittings and Boxes: This Work shall consist of furnishing and installing electrical conduit and fittings necessary to provide for future lighting or operation of structures, as specified in the Contract Documents or as directed by the Engineer. The payment will be full compensation for all excavation, backfill, conduit encasing concrete, hot mix asphalt, attachments, hangers, paint, bends, connections, fittings, mandrelling, pull ropes and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.		
	Conduit in trenches shall be paid for on a linear foot basis.	LF	UP
	Conduit not monolithically incorporated into structure Construction shall be paid for at the Contract Unit Price per linear foot.	LF	UP
	Conduit monolithically incorporated into structure Construction shall be paid for as a part of lump sum for the appropriate structure item.	No	LS
26 56 12	Temporary Street Lighting: This Work shall consist of furnishing and installing temporary lighting in the event existing street lighting cannot be maintained during Construction. The Contractor shall be required to provide the temporary lighting and remove it after Construction is complete.		
	The payment will be full compensation for all material, labor, equipment, tools, and incidentals necessary to complete the Work.	No	LS
26 56 13	Lighting Poles and Standards (Lighting Structures): This Work shall consist of furnishing and installing low level steel and aluminum lighting poles, bracket arms and fittings, as specified in the Contract Documents or as directed by the Engineer. Concrete foundations are excluded. Payment will be full compensation for all material, labor, equipment, tools, and incidentals necessary to complete the Work.		
	Lighting Structures will be measured and paid for at the Contract Unit Price per each pole height, bracket arm length and material type actually installed and accepted by the Engineer.	EA	UP
	Concrete Foundation will be measured and paid for as specified in 10 14 15.02, (Concrete Foundations for Traffic Signals).	CY	UP
	Breakaway Base Support Systems, when specified in the Contract Documents, will be measured and paid for as specified in 10 14 15.08, (Breakaway Base Support System).	EA	UP
	Bracket arms for signal structures or wood poles will be measured and paid for at the Contract Unit Price per each for the pertinent Bracket Arm item.	EA	UP
26 56 13.01	Remove and Relocate or Remove and Dispose of Roadway Lighting Structures: This Work shall consist of removing and relocating or removing and disposal of roadway lighting structures as specified in the Contract Documents or as directed by the Engineer.		
	Removal and Disposal of Roadway Lighting will be measured and paid for at the Contract Unit Price per each. The payment will be full compensation for the removal and disposal of the lighting structure, removal of existing concrete foundation and all material, labor, equipment, tools, and incidentals to complete the Work.	EA	UP
	Removal and Relocation of Roadway Lighting Structures will be measured and paid for at the Contract Unit Price per each. The payment will be full compensation for the removal, storage, reinstallation, connection to existing lighting circuits, removal of existing concrete foundations, and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.	EA	UP
26 56 13.02	Cutting and Capping Mast Arms and Poles: This Work shall consist of cutting, cleaning, galvanizing and capping mast arms, mast arm poles, pedestal poles, and strain poles as specified in the Contract Documents.		
	Cutting and Capping of Mast Arms and Poles will be measured and paid for at the Contract Unit Price per each. The payment will be full compensation for cutting, cleaning, galvanizing, capping and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.	EA	UP

26 56 14	Lighting and Signal Pole Bases: This Work shall consist of constructing concrete foundations for installing traffic signals, highway lighting, joint use pole bases, and signs including the furnishing and installing of a specified base with conduit connection and plugs, anchor bolts with steel nuts and washers, protective sleeves and nuts and greasing of bolts as shown at locations specified in the Contract Documents or as described in the Specifications. Payment includes cost of supporting, bracing, protecting and maintaining existing utility systems in service.		
	This Work will be paid for at the Contract Unit Price bid per each for the specific lighting or signal pole and/or joint use pole base indicated in the proposal after acceptance of the Work by the Engineer. This price and payment shall constitute full compensation for all materials, labor, tools, equipment, hauling, cement concrete, formwork, anchor bolts, stainless steel nuts and washers, protective sleeves and nuts, galvanizing, delivery of stainless steel nuts and washers, and all excavation, furnishing and placing crushed aggregate or recycled concrete, backfilling, compaction, re-compaction, disposal of unsuitable material and incidentals necessary to complete the Work.	EA	UP
28 13 00	Access Control: The Contractor shall provide a photograph identification badge for each member of its workforce.		
	The Contractor shall provide all the necessary labor, materials, tools, equipment and devices for the creation of the identification badges at no additional cost to the City. No separate payment will be made for acquiring the badges. The cost thereof shall be considered as included in the lump sum price bid for the Contract.	No	LS
31 09 16.23	Driven Pile Load Tests: This Work shall consist of applying loads to test piles when the Contract Documents include load tests. The load test setup, the measuring system, the loading device, the loading procedure, the frequency of measuring the movement of piles and the record keeping shall conform to D 1143 unless otherwise specified in the Contract Documents or directed by the Engineer.		
	When the project includes an item for load test, it will be measured and paid for at the Contract Unit Price per each for the pertinent load test items. The payment will be full compensation for furnishing and installing all equipment, Drawings, monitoring, recording, removal of all devices at the completion of the tests and for all material, labor, equipment, tools and incidentals necessary to complete the Work. In the event that the properly conducted load test fails to achieve the designated capacity, the additional tests will be measured and paid for at the Contract Unit Price per each under the load test item.	EA	UP
31 11 00	Cleaning and Grubbing: This Work shall consist of clearing and grubbing within the limits specified in the Contract Documents.		
	Clearing and Grubbing will not be measured but will be paid for at the Contract lump sum price. The payment will be full compensation for the removal and disposal of fences, removal and resetting of mailboxes, selective tree trimming and scar repair, and removal and disposal of existing buildings when not covered as a specific pay item in the Contract Documents, and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.	No	LS
31 12 00	Selective Clearing: This Work shall consist of trimming, sloping and shaping existing ditches, within the Limits of Disturbance and to the lines and grade as specified in the Contract Documents. Clearing and grubbing and the removal and disposal of surplus or unsuitable materials are included in the Work.		
	Trimming Existing Ditches will be measured and paid for at the Contract Unit Price per linear foot of existing ditches on which Work has been completed. Measurement will be along the centerline of the ditch. The payment will be full compensation for all clearing, grubbing, excavation, and disposal of surplus and unsuitable materials and for all labor, equipment, tools, and incidentals necessary to complete the Work.	LF	UP

31 13 13.01	Tree Preservation: This Work shall consist of the establishment of a Tree Preservation Area (TPA) (an area of existing trees, which is to remain protected and preserved) as specified in the Contract Documents or as directed by the Engineer.		
	Tree preservation, including the services of a Maryland licensed tree expert, will not be measured but the cost will be incidental to the Clearing and Grubbing item.	No	Incidental
	Tree Protection Fence will be measured and paid for based on Contract Unit Price per linear foot for the actual number of linear feet measured to the centers of end posts.	LF	UP
	Price Adjustment. If smaller trees are furnished and installed to replace larger trees that have been damaged beyond repair as determined by the Engineer, a reduction of the Contract Price will be made at a rate of two hundred dollars (\$200.00) per inch of caliper differential between the damaged tree and the smaller tree for calipers over twelve inches (12").	Inch	\$200.00 Credit per inch
31 13 13.02	Selective Thinning and Tree Protection: This Work shall consist of the selective thinning and disposing of undesirable live and dead trees, shrubs and vegetation, selective pruning of trees to be saved, and removing and disposing of windfalls, logs, stumps and rubbish as specified in the Contract Documents or as directed by the Engineer and in conformance with the Maryland Department of Natural Resources Roadside Tree Law. This Work may also consist of root pruning, mulching, deep root fertilization or other Work to preserve trees to be saved during Construction.		
	Selective Thinning will be measured and paid for at the Contract Unit Price per acre. The payment will be full compensation for all herbicide, wound dressing, stump removal, backfill, site restoration and for all material, labor, equipment, tools, and incidentals necessary to complete the Work. Outer measurements will be taken from the drip line of the forest canopy.	Per Acre	UP
31 13 13.03	Selective Tree Felling: This Work shall consist of felling trees as specified in the Contract Documents or as directed by the Engineer and in conformance with the Maryland Department of Natural Resources Roadside Tree Law. The size designation, under which each selective tree felling operation is performed, will be determined in conformance with the Tree Size Designation Table specified in 31 13 16, Part 4, (Selective Tree Trimming). The caliper of a tree shall be the diameter at breast height measured four and one half feet (4 1/2') above the ground. Payment will be full compensation for all material, labor, equipment, tools, and incidentals necessary to complete the Work.		
	Selective Tree Felling will not be measured but will be paid for at the Contract lump sum price. The Contractor shall submit a breakdown tabulation within ten (10) days after the Notice to Proceed. The Contractor's breakdown shall list each selective tree felling operation specified in the Contract Documents with a tabulation of the numbers and sizes of trees included in the lump sum price. The total of the individual units shall equal the lump sum price. In the event of a change in the number of trees included under this item, payment will be adjusted on the basis of the Contractor's breakdown of the lump sum price.	No	LS
31 13 16	Selective Tree Trimming: This Work shall consist of selective tree trimming as specified in the Contract Documents or as directed by the Engineer and Tree Protection Expert, and in conformance with the Maryland Department of Natural Resources Roadside Tree Law. The size designation under which each class of selective tree trimming is performed will be determined in conformance with the table in section 31 13 16, Selective Tree Trimming. The caliper of a tree shall be the diameter at breast height measured four and one half feet (4 1/2') above the ground. Payment will be full compensation for all material, labor, equipment, tools, and incidentals necessary to complete the Work		
	Selective tree trimming will not be measured but will be paid for at the Contract lump sum price. In the event of a change in the number of trees included under this item, payment will be adjusted on the basis of the Contractor's breakdown of the lump sum price. This breakdown shall be submitted by the Contractor to the Engineer within ten (10) days after the Notice to Proceed. The Contractor's breakdown shall list each class of selective tree trimming specified in the Contract Documents with a tabulation of the numbers and sizes of trees included under each class of tree trimming and the individual prices for each unit included in the lump sum price. The total of the individual units shall equal the lump sum price.	No	LS

31 14 13.24	Topsoil and Subsoil: This Work shall consist of salvaging topsoil and subsoil, placing salvaged topsoil and subsoil and placing furnished topsoil and subsoil as specified in the Contract Documents or as directed by the Engineer. Payment will be full compensation for the preparation of surfaces, loading, hauling, placing, supplying and spreading limestone and soil amendments, and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.		
	Salvaged topsoil will not be measured but the cost will be incidental to the Contract Price for Class I Excavation.	No	Incidental
	Salvaged subsoil will not be measured but the cost will be incidental to the Contract Price for Class 1 Excavation.	No	Incidental
	Placing Salvaged Topsoil will be measured and paid for at the Contract Unit Price per square yard for the depth specified.	SY	UP
	Placing Salvaged Topsoil for Grading Adjustment will be measured and paid for at the Contract Unit Price specified in the Contract Documents.	As specified	UP
	Placing Salvaged Subsoil will be measured and paid for at the Contract Unit Price per cubic yard.	CY	UP
	Placing Furnished Topsoil will be measured and paid for at the Contract Unit Price per square yard for the depth specified.	CY	UP
31 23 13	Subgrade Preparation: This Work shall consist of the preparation, protection, and maintenance of the subgrade prior to the Construction of succeeding courses.		
	Subgrade preparation, including bleeder ditches and any mechanical tamping will not be measured but the cost will be incidental to the pertinent items specified in the Contract Documents.	No	Incidental
31 23 13.10	LIME Treated Subgrade: This item shall consist of a treated subgrade composed of an intimate mixture of soil, agricultural lime and water uniformly mixed, compacted, shaped and cured in accordance with these Specifications to the line, grade, thickness and cross sections as shown on the Plans. The measurement of the manipulation of lime-treated subgrade shall be the number of square yards complete in plan, determined by surface measurements of completed base course as indicated on the Plans. Lime for lime-treated subgrade shall be measured on the basis of the actual number of tons used. In no case will the amount approved for payment be greater than one hundred five percent (105%) of the theoretical amount required based on the number of square yards as measured above, the maximum dry density of the mixture and the lime content as determined by the Engineer. Soil will be measured under the pertinent class of excavation.		
	The Work shall be paid for at the Contract Unit Price per square yard for lime-treated subgrade complete in place, which price shall be full compensation for mixing, watering, compacting and finishing of the item, and for labor, tools, equipment and incidentals necessary to complete the item and all materials, except soil and lime. Soil will be paid for under the pertinent class of excavation.	SY	UP
	Lime for lime-treated subgrade shall be paid for at the Contract Unit Price per ton for Agricultural Lime which payment shall be made only for lime actually used as measured above. The price shall include furnishing, delivery and Work incidental for the soil lime mixing operation.	Ton	UP
31 23 16.05	Test Pit Excavation: This Work shall consist of excavation and backfilling for test pits to determine the location of underground structures and utilities as specified in the Contract Documents or as directed by the Engineer.		
	Test Pit Excavation will be measured and paid for at the Contract Unit Price per cubic yard for the material actually removed from within the limits specified. The payment will be full compensation for all excavation, tamped backfill and all material, labor, equipment, tools, and incidentals necessary to complete the Work.	CY	UP
	Any pavement to be replaced will be measured and paid for as specified in 32 13 13.33, (Plain and Reinforced Portland Cement Concrete Pavement) and 32 13 13.43, (Continuously Reinforced Portland Cement Concrete Pavement).	As specified	As Specified

31 23 16.10	Roadway Excavation (Class 1, Class 1-A, Class 2): This Work shall consist of the excavation and grading for roadways and their appurtenances to the lines and grades specified in the Contract Documents. The Contractor shall use all suitable materials from excavation in the Construction of embankments throughout the limits of the Work as directed by the Engineer.		
	Roadway excavation will be measured and paid for at the Contract Unit Price per cubic yard for the pertinent Class of Excavation. The payment will be full compensation for all excavation and hauling, blasting, formation and compaction of embankments and backfills, disposing of excess and unsuitable materials, preparation and completion of subgrade and shoulders except as otherwise specified, serrated slopes, rounded and transition slopes, and for all material, labor, equipment, tools, and incidentals necessary to complete the Work. Payment will not be made for excavation of any material used for purposes other than those designated. See 31 23 16.10 Roadway Excavation, for Limits and methods of Measurement.	SY	UP
	Presplitting will not be measured but the cost will be incidental to the Contract Unit Price per cubic yard for the pertinent class of excavation in which it occurs.	No	Incidental
	Removal of existing pavement, sidewalk, paved ditches, curb or combination curb and gutter within the limits of any class of excavation will not be measured but the cost will be incidental to the Contract Unit Price per cubic yard for the pertinent class of excavation in which it occurs.	No	Incidental
	The excavated material or common borrow required to fill the temporary wedge area in conformance with paragraph 3.11, maintaining the four to one (4:1) or flatter slope, compaction, and removal of the material will not be measured but the cost will be incidental to the Contract Unit Price for the pertinent class of excavation. For measurement and payment of drums refer to 34 71 13.02, (Drums for Maintenance of Traffic).	No	Incidental
	Backfill for unsuitable material will be measured and paid for at the Contract Unit Price for the pertinent item specified in the Contract Documents.	As specified	UP
31 23 16.12	Select Borrow Excavation: A. This Work shall consist of furnishing, excavating, hauling, and placing approved materials for embankments and backfills when sufficient quantities of suitable materials are not available from other excavations as specified in the Contract Documents. It shall include all Work prescribed for backfills, embankments, subgrade, and earth shoulders, all necessary clearing and grubbing, the removal and disposal of overburden or other unsuitable spoil material and the trimming, shaping, dressing, draining, and reclamation of the pit or location from which borrow material is secured.		
	Borrow excavation will be measured and paid for at the Contract Unit Price per cubic yard for the pertinent Borrow item. The payment will be full compensation for clearing and grubbing, furnishing, excavating and hauling, sloping, draining and reclamation of pits (if Option 2 or 3 is selected), the formation and compaction of embankments, backfills, subgrade, manipulation and additives for select borrow, all Work and materials for earth shoulders except as otherwise specified, disposing of all unsuitable spoil material, and for all material, labor, equipment, tools, and incidentals necessary to complete the Work. See Specification for options.	CY	UP
31 23 16.14	Channel or Stream Change Excavation (Class 5): This Work shall consist of excavation for changes in streams and channels when specified in the Contract Documents. The Contractor shall use all suitable materials from excavation in the Construction throughout the Contract. Material will be measured in its original position and the volume computed by the method of average end area. The cross sectional area measured will not include liquids. Measurement for Class 5 excavation excludes any material removed outside the limits of payment as specified in the Contract Documents.		
	Class 5 excavations will be measured and paid for at the Contract Unit Price per cubic yard. The payment will be full compensation for all excavation and hauling, formation and compaction of embankments and backfill, backfilling old stream beds or otherwise disposing of excess and unsuitable materials, and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.	CY	UP

31 23 16.16	Structure Excavation: This Work shall consist of excavation and backfill for structures as specified in the Contract Documents or as directed by the Engineer. Payment for Class 3 excavation specified in the Contract Documents will be full compensation for all excavation, backfill, filling void around footings due to removing forms, blasting, grout, dewatering, removal and disposal of excess or unsuitable material, and for all material, labor, equipment, tools, and incidentals necessary to complete the Work. No measurement or payment will be made for removing any water or liquids. See the specification for methods and limits of measurement.		
	Class 3 excavations will be measured and paid for at the Contract Unit Price per cubic yard for the volume of material actually removed from within the limits specified.	CY	UP
	When an item for Class 3 excavation is not included in the Contract Documents, the excavation will not be measured but the cost will be incidental to other items.	No	Incidental
	Additional excavation required below the elevation specified in the Contract Documents and necessitated by the lowering or deepening of footings, or the placing of subfoundations or underpinning, will be measured and paid for at the Contract Unit Price for Class 3 excavation.	CY	UP
	Sheeting, bracing, and shoring either removed or left in place, will not be measured but the cost will be incidental to other pertinent items unless otherwise specified in the Contract Documents.	No	Incidental
	Excavation necessary to expose or remove piles, grillages, sheeting, cribbing, masonry, or other obstructions will not be measured nor paid for if the excavation occurs outside the limits of excavation. The removal and disposal of obstructions within the limits of excavation will not be measured separately but the cost will be included in the Contract unit price for Class 3 excavation.	CY	UP
31 23 16.17	Excavation for Incidental Construction Class 3: This Work shall consist of excavation below the planned elevation as specified in the Contract Documents or as directed by the Engineer.		
	Class 3 Excavation for Incidental Construction will be measured and paid for at the Contract Unit Price per cubic yard. The payment will be full compensation for all material, labor, equipment, tools, and incidentals necessary to complete the Work.	CY	UP
	Backfill will be measured and paid for as specified in 31 23 23.13, Part 4, (Selected Backfill).	CY	UP
31 23 23.10	Tamped Fill: This Work shall consist of compacting embankment and backfill materials by means of mechanical tampers or vibratory compactors. This method of compaction shall be used wherever materials cannot be adequately compacted by other methods approved by the Engineer.		
	Compacting embankments and backfills by mechanical tampers or vibratory compactors will not be measured but the cost will be incidental to the pertinent items specified in the Contract Documents.	No	Incidental
31 23 23.13	Select Backfill: This Work shall consist of placing selected backfill material as specified in the Contract Documents or as directed by the Engineer.		
	Selected Backfill using No. 57 Aggregate or Selected Backfill using Crusher Run Aggregate CR-6 will be measured and paid for at the Contract Unit Price per cubic yard. The payment will be full compensation for compaction and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.	CY	UP

31 23 23.24	Hydraulic Fill: This item comprises the furnishing, transportation and placing or fill or embankment material, obtained by hydraulic dredging, transported by pumping and placed by ponding or allowing the solids to settle out of the effluent discharging from the dredging pipe lines. Unless otherwise noted, Hydraulic Fill will be measured in place in the embankment, whether above or below the original ground line or water line on the basis of the volume in place within the prescribed pay limits as shown on the Plans or described in the special provisions. Measurements will be made by cross sections and volumes and will be computed by average end areas, from the cross sections of the original ground combined with the cross sections of the completed Work. No allowance will be made for over-fill, for wasted material, for material lost as a result of methods used or for additional material placed as a result of subsidence, compression, displacement or slides.		
	Payment for hydraulic fill will be made on the basis of the Contract Unit Price per cubic yard for Hydraulic Fill, complete and in place. This shall constitute full compensation for furnishing all labor, dredging, pipeline, materials and incidentals necessary for the satisfactory completion of this item as specified herein. No additional compensation will be allowed for the baffles, bulkheads, weirs, dikes, etc., for displacement or slides, for cleaning out waterways or for shaping the embankment surface or slopes to the required cross sections.	CY	UP
31 23 23.33	Flowable Fill: This Work shall consist of furnishing, hauling and placing a flowable cement stabilized backfill material as specified in the Contract Documents or as directed by the Engineer. The material shall be used for utility cut backfill and shall set up to a stabilized mass.		
	Flowable backfill for utility cuts will be measured and paid for at the Contract Unit Price per cubic yard. The payment will be full compensation for all material, labor, equipment, tools, and incidentals necessary to complete the Work.	CY	UP
31 23 23.53	Porous Backfill: This Work shall consist of furnishing and placing of porous backfill material, reinforced concrete base and pipe drains at the rear of abutments, wing walls, retaining walls, and other locations as specified in the Contract Documents or as directed by the Engineer.		
	Porous backfill will not be measured but will be paid for at the Contract lump sum price for the pertinent porous backfill item. The payment will be full compensation for all excavation, concrete, reinforcement, geotextiles, drains, and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.	No	LS
	If no item for porous backfill appears in the Contract Documents, the Work will not be measured but the cost will be incidental to other items specified in the Contract Documents.	No	Incidental
31 23 33 Cont'd	Trenching and Backfilling, Point Excavation and Backfill: Trench/Point excavation, backfill, and compaction shall include, but not necessarily be limited to, the excavation, backfill, and compaction of trenches for storm drains, water mains, valves, fire hydrants, sanitary sewers, and other underground utility systems shown on the Plans, and in accordance with the Contract Documents.		
	This Work will not be measured but the cost will be incidental to the applicable utility item. This Work includes all applicable excavation, sheeting, shoring, dewatering, hauling, invert paving, storing, rehandling of material, removal and disposal of excess and unsuitable material (above the planned sub-grade), tamped fill, forming bed or foundation, stone, gravel cradle, backfill, compaction and all material, labor, equipment, tools, and incidentals necessary to complete the Work.	No	Incidental
	No payment will be made for excavation and refill below planned trench sub-grade made necessary by default or negligence on the part of the Contractor.	No	Incidental

31 23 33 cont'd	When authorized by the Engineer, in writing, payment for excavation below planned trench sub-grade to lower pipe invert or remove unsuitable material and for refill material to restore trench sub-grade shall be made at the unit price Bid per cubic yard in the Proposal for Class 3 Excavation for Incidental Construction (refer to 31 23 16.17, (Class 3 Excavation for Incidental Construction)) and at the unit price Bid per ton in the Proposal for select backfill (refer to 31 23 23.13, (Select Backfill)) respectively, which price and payment shall include all materials, labor, tools, equipment, hauling, excavation, removal and disposal of unsuitable material, re-handling of material, backfilling, compacting, sheeting and shoring, pumping and all incidentals necessary to complete the Work, except that the Bid price for the latter of these items shall be for furnishing and placement of the refill material only.	CY	UP
	When, due to field conditions, the Engineer authorizes (in writing) (1) the lowering of a pipe invert or (2) Class 3 excavation to remove unsuitable material, the additional excavation below planned trench sub-grade will be measured in cubic yards computed from field measurements of the extra depth below said planned sub-grade and the applicable trench width permitted for payment. Refill material to restore trench sub-grade will be measured in tons based on verified weights from delivery tickets.	CY	UP
	In case the grade or elevation of any pipe is raised as to require a depth of trench less than that shown on the Plans, an equitable credit for the decrease in trench excavation shall be agreed upon, in writing, before proceeding with the Work of this item.	CY	Credit
	The Contractor will be paid only for such sheeting, sheet piling, braces, shores, etc., which are left in place by written order of the Engineer. Payment will be made for the actual cost of this timber at the current market price at the time it is purchased by the Contractor who shall submit to the Engineer receipted bills or other evidence, as the Engineer may require, to show the price paid for all timber on which the above mentioned payment is to be made. Payment will cover only the length and the amount of timber actually left in the ground except that when timber sheeting or timber sheet-piling is cut off payment will be made for the entire length driven, the same as if it had been left in place. No payment will be made for any timber sheeting, timber sheet-piling, braces, shores, etc., left in place unless specifically ordered by the Engineer, nor will any payment be made for cutting off, removing and otherwise handling such sheeting but all such costs and incidental Work shall be included in and covered by the unit price Bid for various pipe items in the Proposal.	Invoice	Actual Cost
	No payment will be made for any timber sheeting, timber sheet-piling, braces, shores, etc., left in place unless specifically ordered by the Engineer, nor will any payment be made for cutting off, removing and otherwise handling such sheeting but all such costs and incidental Work shall be included in and covered by the unit price Bid for various pipe items in the Proposal.	No	LS
	Contingent trench backfill shall be measured in cubic yards compacted in place. The maximum width of trench for payment for the various sizes of pipe shall conform to the dimensions for trench width for specific pipe (size, etc.) and/or other type of utility being installed, as shown on the standard plates. The depth of trench shall be considered to be from the top of original ground or planned sub-grade or existing roadway sub-grade or as designated by the Engineer, whichever is lower, to the center line of the pipe. The space around inlets and manholes will not be measured, but shall be considered as an extension of the adjacent trench section. Payment for "Contingent Trench Backfill" compacted in place shall be the unit price Bid per cubic yard which price shall include the disposal of unsatisfactory material, the furnishing, hauling and compacting of materials, tools, equipment, labor and all incidentals necessary to complete the Work.	CY	UP
31 24 10	Earth Shoulders: This Work shall consist of constructing shoulders using earth as specified in the Contract Documents.		
	Earth shoulders will not be measured but the cost will be incidental to the Contract Unit Price for the pertinent excavation item.	No	Incidental

31 23 10.01	Shoulder Edge Drop Off Grading Adjustment: This Work shall consist of constructing the area adjacent to the outside edge of the shoulder to eliminate the shoulder edge drop off.		
	Crusher Run Aggregate CR-6, Bank Run Gravel Subbase, Select Borrow, Common Borrow, Topsoil, and Hot Mix Asphalt Millings or Grindings for Shoulder Edge Drop Off will be measured and paid for at the Contract Unit Price per ton, cubic yard or square yard, as specified in the Contract Documents. The payment will be full compensation for furnishing, hauling, placing, compacting, maintaining, and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.	CY or SF	UP
31 24 13.10	Embankment and Subgrade: This Work shall consist of constructing the embankment and subgrade of suitable material obtained from roadway, structure, borrow, and other excavation included in the Contract. The material shall be placed, processed, and compacted to the lines and grades specified in the Contract Documents.		
	Embankment, subgrade, and all necessary Work will not be measured but the cost will be incidental to the Contract Unit Price per cubic yard for the pertinent class of excavation. The payment will be full compensation for the formation, sprinkling, compacting, test rolling, shaping, scarifying, breaking or removing of the existing pavement, sloping, trimming, finishing, maintaining embankments and subgrade, and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.	No	Incidental
	Replacement of material lost as a result of natural causes will be measured and paid for at the Contract Unit Price per cubic yard for the pertinent class of excavation item or as directed by the Engineer.	CY	UP
	Compaction by means of mechanical tampers or vibratory compactors will not be measured but the cost will be incidental to the pertinent class of excavation item.	No	Incidental
31 25 00.01	Erosion and Sediment Control: This Work shall consist of the application of erosion and sediment control measures throughout the life of the project to control erosion and to minimize the sedimentation in rivers, streams, lakes, reservoirs, bays, and coastal waters as specified in the Contract Documents or as directed by the Engineer. Erosion and sediment control measures shall be applied to all disturbed areas. In addition, the Contractor shall identify all staging and stockpile areas and apply erosion and sediment control measures as approved by the Engineer. The Contractor shall assign an employee to the project to serve in the capacity of Erosion and Sediment Control Manager (ESCM).		
	The payment will be full compensation for all material, labor, equipment, tools, and incidentals necessary to complete the Work. The maintenance, repair, resetting and final removal of all erosion and sediment control devices will not be measured, but the cost will be incidental to the Contract Price to construct the device unless otherwise specified in the Contract Documents.	No	Incidental
	Erosion and sediment control manager will not be measured but the cost will be incidental to erosion and sediment control items specified in the Contract Documents.	No	Incidental
	The implementation of the erosion and sediment control plan by the Contractor will not be measured but the cost will be incidental to the erosion and sediment control items specified in the Contract Documents.	No	Incidental
	Erosion and sediment control original excavation will be measured and paid for at the Contract Unit Price per cubic yard. The payment will also include excavation, backfill, and grading.	CY	UP
	Erosion and sediment control cleanout excavation will be measured and paid for at the Contract Unit Price per cubic yard. The payment will also include excavation and disposal.	CY	UP
	Earth dikes will be measured and paid for at the Contract Unit Price per linear foot. When four inch to seven inch (4" to 7") stone, temporary seeding and soil stabilization matting are required, they will be measured and paid for as specified in 32 92 19.01, Part 4.B, (Temporary Seeding and Temporary Wood Cellulose Mulching) and 32 91 16.16, Part 4, (Soil Stabilization Matting), respectively.	LF	UP

Cont'd

31 25 00.01 cont'd	Temporary swales will be measured and paid for at the Contract unit Price per linear foot. When four inch to seven inch (4" to 7") stone, temporary seeding and soil stabilization matting are required, they will be measured and paid for as specified in 32 92 19.01, Part 4.B, (Temporary Seeding and Temporary Wood Cellulose Mulching) and 32 91 16.16, Part 4, (Soil Stabilization Matting), respectively.	LF	UP
	Perimeter dike/swales will be measured and paid for at the Contract Unit Price per linear foot. When temporary seeding and soil stabilization matting are required, they will be measured and paid for as specified in 32 92 19.01, Part 4.B, (Temporary Seeding and Temporary Wood Cellulose Mulching) and 32 91 16.16, Part 4, (Soil Stabilization Matting), respectively.	LF	UP
	Pipe Slope Drain will be measured and paid for at the Contract Unit Price per linear foot. The payment will also include excavation, backfill, flared end section, geotextile, anchors, coupling bands, and pipe elbows.	LF	UP
	Outlet protection will be measured and paid for at the Contract Unit Price per Ton.	Ton	UP
	Riprap inflow protection will be measured and paid for at the Contract Unit Price per Ton.	Ton	UP
	Stone check dam will be measured and paid for at the Contract price per ton.	Ton	UP
	Sediment traps will be measured and paid for at the Contract Unit Price for one or more of the items listed: 1. Erosion and Sediment Control Original Excavation as specified in paragraph D. 2. Corrugated Metal Pipe per linear foot. 3. Polyvinyl Chloride Pipe per linear foot. 4. Stone per ton. 5. Inflow protection as specified in Riprap and Stone Check Dams above.	As specified	UP
	Stone outlet structure will be measured and paid for Per ton at the Unit Price. The baffle board and stakes will not be measured but the cost will be incidental to the Contract price.	Ton	UP
	Removable Pumping Station will be measured and paid for at the Contract Unit Price per each. The payment will also include excavation, pipe, geotextile, wire mesh, steel plate, hose, pump and connections. No. 57 stone will be measured and paid for as specified in paragraph Z.	EA	UP
	Sump Pit will be measured and paid for at the Contract Unit Price per each. The payment will also include excavation, pipe, geotextile, wire mesh, steel plate, hose, pump and connections. No. 57 stone will be measured and paid for as specified in paragraph Z.	EA	UP
	Portable Sediment Tank will be measured and paid for at the Contract Unit Price per each. The payment will also include pipe, geotextile, wire mesh, steel plate, hose, pump and connections.	EA	UP
	Silt Fence will be measured and paid for at the Contract Unit Price per linear foot.	LF	UP
	Remove and Reset Silt Fence will be measured and paid for at the Contract Unit Price per linear foot.	LF	UP
	Inlet Protection will be measured and paid for at the Contract Unit Price per each.	EA	UP
	Stabilized Construction Entrance and Rehabilitate Stabilized Construction Entrance will be measured and paid for at the Contract Unit Price per ton. When pipe is required, it will not be measured but the cost will be incidental to the Contract Price.	Ton	UP
	Super Silt Fence will be measured and paid for at the Contract Unit Price per linear foot.	LF	UP
	Remove and Reset Super Silt Fence will be measured and paid for at the Contract Unit Price per linear foot.	LF	UP
Cont'd	Temporary asphalt berm will be measured and paid for at the Contract Unit Price per ton of Hot Mix Asphalt. The removal of the temporary asphalt berm will not be measured but the cost will be incidental to the Contract Price.	Ton	UP

31 25 00.01 cont'd	Straw Bales will be measured and paid for at the Contract Unit Price per linear foot measured along the approximate centerline of the row of bales. Excavation and anchoring the straw bales will not be measured but the cost will be incidental to the Contract Price.	LF	UP
	Stone for sediment control will be measured and paid for at the Contract Unit Price per ton for the pertinent Stone for Sediment Control item. Geotextile, excavation and backfill will not be measured but the cost will be incidental to the Contract Price.	Ton	UP
	Maintenance of Stream Flow will not be measured but will be paid for at the Contract lump sum price. The payment will also include diversion structures, sandbags, polyethylene sheeting, diversion pipes, pumps, hoses and connections.	No	LS
	Temporary Wood Cellulose Mulch will be measured and paid for as specified in 32 92 19.01, Part 4.C, (Temporary Seeding and Temporary Wood Cellulose Mulching).	Ton	UP
	Temporary Seeding will be measured and paid for as specified in 32 92 19.01, Part 4.B, (Temporary Seeding and Temporary Wood Cellulose Mulching).	LB	UP
	Seeding and overseeding Roadside Areas and median areas will be measured and paid for as specified in 32 92 23.01, Part 4.B, (Turf Establishment).	LB	UP
	Sodding will be measured and paid for as specified in 32 92 23, Part 4.A, (Sodding).	SY	UP
	Temporary earth berms and interceptor berms for incremental stabilization will not be measured but the cost will be incidental to the excavation items specified in the Contract Documents.	No	Incidental
31 32 19.16	Geotextile Soil Stabilization: This Work shall consist of furnishing and installing a layer of geotextile and a minimum of twelve inches (12") of graded aggregate base to bridge unstable material and minimize the use of undercutting. This item shall only be used when specified in the Contract Documents or as directed by the Engineer. In extremely unstable areas, the Engineer may increase the thickness of the graded aggregate base material.		
	Geosynthetic stabilized subgrade using graded aggregate base will be measured and paid for at the Contract Unit Price per cubic yard. The payment will be full compensation for furnishing and placing the geotextile and graded aggregate base, compaction, test strip, and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.	CY	UP
	Excavation will be measured and paid for in conformance with 31 23 16.10, (Roadway Excavation Class 1, Class 1-A, Class 2).	As specified	As Specified
31 35 23.14	Concrete Slope and Channel Protection: This Work shall consist of protecting slopes and channels with cast-in-place concrete and cutoff walls as specified in the Contract Documents or as directed by the Engineer. The payment will be full compensation for all concrete, forms, excavation, curing, joint sealer and filler, backfill, compaction, disposal of excess or unsuitable material, and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.		
	Concrete Slope and Channel Protection and Concrete Slope Protection for Streams will be measured and paid for at the Contract Unit Price per square yard of finished surface.	SY	UP
	Cutoff Walls will be measured and paid for at the Contract Unit Price per linear foot.	LF	UP
	The removal and disposal of unsuitable material below the subgrade will be measured and paid for at the Contract Unit Price per cubic yard for Class 2 Excavation. The payment will include the cost of replacing the unsuitable material with suitable material acceptable to the Engineer except as specified in 03 47 12, Part 4, (Concrete Ditches).	CY	UP
	When Borrow or Selected Backfill using No. 57 Aggregate or Selected Backfill using Crusher Run Aggregate CR-6 is approved by the Engineer as replacement material for the Class 2 Excavation, it will be measured and paid for at the Contract Unit Price per cubic yard for the pertinent item specified in the Contract Documents.	CY	UP

31 35 26.24	Riprap Slope and Channel Protection: This Work shall consist of protecting slopes and channels with a covering of geotextile and stone and an aggregate filter blanket as specified in the Contract Documents or as directed by the Engineer. The payment will be full compensation for all excavation, geotextile, stone, backfill, compaction, disposal of excess material, prewashing when required, preparation of quality control section and for all material, labor, equipment, tools and incidentals necessary to complete the Work.		
	Riprap Slope and Channel Protection will be measured and paid for at the Contract Unit Price per square yard. Area measurements will be actual surface measurements.	SY	UP
	Cutoff Walls will be measured and paid for at the Contract Unit Price per linear foot.	LF	UP
	Riprap for scour protection will be measured and paid for at the Contract Unit Price per ton for the item Class II Riprap for scour protection.	Ton	UP
31 36 00	Gibbons: This Work shall consist of protecting slopes and channels with stone filled wire baskets as specified in the Contract Documents or as directed by the Engineer.		
	Gabions, including cutoff walls, will be measured and paid for at the Contract Unit Price per cubic yard of stone filled wire baskets complete in place. The payment will be full compensation for all excavation, geotextile, stone, ties or fasteners, backfill, compaction, disposal of excess material and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.	CY	UP
31 37 00.01	Riprap Ditches: This Work shall consist of constructing riprap ditches and riprap ditches with capping as specified in the Contract Documents or as directed by the Engineer. The payment will be full compensation for all excavation, geotextile, stone, backfill, and disposal of excess material and for all material, labor, equipment, tools and incidentals necessary to complete the Work.		
	Riprap ditches and riprap ditches with capping will be measured and paid for at the Contract Unit Price per square yard of finished surface.	SY	UP
	Bottom Cutoff Walls and Side Cutoff Walls will be measured and paid for at the Contract Unit Price per linear foot.	LF	UP
31 62 00	Driven Piles: This Work shall consist of furnishing and installing piling as specified in the Contract Documents or as directed by the Engineer. Drilled shafts (caissons) are covered under a separate specification section. The payment for the items specified in the Contract Documents will be full compensation for all material, labor, equipment, tools, and incidentals necessary to complete the Work.		
	Piling (permanent and test) will be measured and paid for at the Contract Unit Price per linear foot for the pertinent Piling item. The measured length of all piling will be taken from its tip up to final cutoff unless otherwise specified in the Contract Documents. For test piles not utilized as permanent piles, the measurement for cutoff will be at the same elevation as the nearest proposed permanent pile or to actual top of test pile, whichever is lower. Where piling designated as test piles is accepted for use in the permanent structure, measurement will be made as test piles and no additional allowance will be made in other piling items.	LF	UP
	Furnishing and setup of pile driving equipment required for driving permanent and test piles will not be measured but the cost will be incidental to the Contract Unit Price for the pertinent Pile item.	No	Incidental
	When an item for setup for driving pile is included in the Contract Documents, the furnishing and setup of pile driving equipment required for driving permanent and test piles will be measured and paid for at the Contract Unit Price per each for the pertinent setup for driving pile items. The unit price per each setup required for driving each pile for the proposed structure will be used regardless of the distance that the equipment must be moved for each pile setup. A maximum of one (1) setup will be paid per pile location. No additional compensation will be paid for any setup required for re-driving or any additional driving of any pile no matter what reason the particular pile may require re-driving or additional driving.	EA	UP
Cont'd			

31 62 00 cont'd	Pile points for steel H piles will be measured and paid for at the Contract Unit Price per each of the pertinent Pile Points for Steel H Pile items.	EA	UP
	Timber sheet piling will be measured and paid for at the Contract Unit Price per one thousand (1000) board feet for the pertinent Timber Sheet Piling item. Computation of quantities will be based on nominal thickness of lumber, the length of the sheet piling, and the average depth of the sheet piling from cutoff at the top to the tip of the sheet piling in the completed structure. No allowance will be made for waste.	1000 Board Feet	UP
	Steel sheet piling will be measured and paid for at the Contract Unit Price per square foot as measured along the plane of the surface for the pertinent Steel Sheet Piling item.	SF	UP
	The following will not be measured but the cost will be incidental to other pertinent items specified in the Contract Documents: 1. When specified, tips for steel pipe piles. 2. Test pieces of sheet piling (timber or steel). 3. Dewatering, clean out, filler, reinforcement and concrete used in steel pipe piles. 4. Pile splices. 5. Augering, including sleeve and backfill when required. 6. Cleaning, painting, or coating of piling. 7. Piling or sheet piling for temporary structures, piles or sheet piling driven for the Contractor's convenience, or for any piles or sheet piling not specified in the Contract Documents. 8. Piling not approved by the Engineer, such as piles not properly driven, piles with questionable safe bearing values, piles damaged during driving, or piles driven below planned cutoff or the removal of any pile rejected by the Engineer as unsatisfactory. 9. Glass resin composite shield used on timber piles.	No	Incidental
31 62 13.21	Protective Jacket for Piles: This Work shall include cleaning piles, fabricating, furnishing and placing wire fabric, fabricating, furnishing, installing and sealing the protective jackets, filling the void between pile and jacket with grout as specified in the Contract Documents or as directed by the Engineer. A. The payment will be full compensation for fabricating, furnishing and installing protective jackets including welded steel wire fabric, grout, excavation, and all material, labor, equipment, tools and incidentals necessary to complete the Work.		
	Protective jackets will be measured and paid for at the Contract Unit Price per each for the pertinent Protective Jacket for Pile item.	EA	UP
	Protective jackets will be measured and paid for at the Contract Unit Price per linear foot (depth) for the pertinent Protective Jacket for Pile item.	LF	UP
	Protective jacket inspections that are satisfactory and accepted by the Engineer will be measured and paid for at the Contract Unit Price per each for the pertinent Protective Jacket Inspection items. Payment will also be full compensation for removal of the jacket, removal of the grout, cleaning, and reinstalling a protective jacket, welded steel wire fabric, and grout.	EA	UP
	Protective jacket inspections that are unsatisfactory and rejected by the Engineer will not be measured or paid for. The Contractor shall remove the protective jacket, grout, and welded steel wire fabric and clean the existing structure at no additional cost to the City.	No	Incidental
31 64 16	Drilled Shafts (Caissons): This Work shall consist of constructing drilled shafts (caissons) as specified in the Contract Documents, or as directed by the Engineer. A. The payment for the items specified in the Contract Documents will be full compensation for all material, labor, equipment, tools, and incidentals necessary to complete the Work.		
	Drilled shafts including furnishing and setup of augering equipment, augering, drilling, excavating, dewatering, inspection, testing, services of the shaft installer and geotechnical engineer, sleeves, reinforcement, concrete, disposal of excess and unsuitable material, etc., will be measured and paid for at the Contract Unit Price per linear foot for the pertinent Drilled Shaft item.	LF	UP
	When subfoundation investigation is specified, it will be measured and paid for in conformance with the following: 1. Subfoundation Investigation will be measured and paid for at the Contract Unit Price per linear foot for the actual total length of holes drilled. The payment will be full compensation for the geologist or geotechnical engineer services, and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.	LF	UP

31 66 16.23	Concrete Cribbing Foundation Walls: This specification is intended to describe a supporting device known as concrete cribbing, also known as crib Work, crib walls and bin type crib Work. It shall consist of precast concrete members, rectangular in section and reinforced with steel bars. These sections are laid on a prepared foundation in tiers or levels. Generally, the assembled unit has a bevel or batter so as to lean towards the embankment for which it is intended to support. After erection, the space within the concrete members is backfilled. The cribbing or crib walls shall be precast, delivered, erected, backfilled and tamped in accordance with the Plans, Special Provisions or described in the manufacturer's catalog. Work for Lump Sum or Unit Price payment shall include all materials, concrete sections, reinforcing, manufacture or precasting and delivery, excavation, preparing foundation, handling, erection, backfilling, tamping and all equipment, tools, labor and incidental Work.		
	Crib walls will not usually be measured, as they will be classified on lump sum basis. Drawings will provide heights, lengths and depths of the various sections, as well as batters and bevels, or reference will be made to manufacturer's catalog, types and standard details of Construction.	No	LS
	In event, however that it should be desired to obtain Bids on types of cribbing or crib walls likely to vary, unit price items may be set forth in the Proposal and in which case the measurement will be on the front area basis in square yards. Dimensions will be taken parallel to and at the front face of the wall vertically and horizontally for each section. The product of these dimensions will be the pay area for the section. The pay area for the entire installation will be the sum of the front areas of all the sections.	SY	UP
	Concrete cribbing satisfactorily completed and accepted and counted on the lump sum basis or measured as described in the preceding section will be paid for at the pertinent Contract lump sum or unit price, as may be called for by the Proposal, which price shall include all materials, concrete sections, reinforcing, manufacture or precasting and delivery, excavation, preparing foundation, handling, erection, backfilling, tamping and all equipment, tools, labor and incidental Work.		
32 01 13.61	Slurry Seal: This Work shall consist of constructing a slurry seal course using a slurry seal (SS), or latex modified slurry seal (LMSS) as specified in the Contract Documents or as directed by the Engineer.		
	Slurry Seal and Latex Modified Slurry Seal will be measured and paid for at the Contract Unit Price per square yard for one or more of the pertinent items below. The payment will be full compensation for furnishing and placing the aggregate, tack coat, tie-ins to entrances and connecting roads, mineral filler, emulsion, latex emulsion and for all material, labor, equipment, tools, and incidentals necessary to complete the Work. 1. Slurry Seal Using Type II Mix (One (1) Coat). 2. Slurry Seal Using Type III Mix (One (1) Coat). 3. Latex Modified Slurry Seal Using Type II Mix (One (1) Coat). 4. Latex Modified Slurry Seal Using Type III Mix (One (1) Coat). 5. Latex Modified Slurry Seal Using Type II Mix (First Coat). 6. Latex Modified Slurry Seal Using Type III Mix (Second Coat). Price Adjustment. Material not conforming to these Specifications may be accepted at a reduced price if the Engineer determines that it is not detrimental to the Work. See Specification for details and price adjustments.	SY	UP
32 01 16.71	Grinding Hot Mix Asphalt Pavement: This Work shall consist of grinding the hot mix asphalt (HMA) pavement to the depth and at the locations specified in the Contract Documents or as directed by the Engineer.		
	Grinding Hot Mix Asphalt Pavement with carbide cutting bits will be measured and paid for at the pertinent Contract Unit Price per square yard. The square yard measurement will be computed from the actual width and length measurements of the area that has been ground. The payment will be full compensation for grinding, removal and disposal of ground material, and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.	SY	UP
	Filling depressions and potholes, and wedging manholes, valve boxes, inlets, or other structures using hot mix asphalt will be measured and paid for as specified in the Contract Documents.	As specified	As Specified
	Hot Mix Asphalt Patches will be measured and paid for as specified in 32 01 17.59, Part 4, (Hot Mix Asphalt Patches).	As specified	As Specified

32 01 17.59	Hot Mix Asphalt Patches: This Work shall consist of repairing rigid, flexible, or composite pavements by removing part or all of the section of the existing pavement and replacing the removed materials using hot mix asphalt (HMA) paving material. The locations of the repairs will be as specified in the Contract Documents or as directed by the Engineer. See Specification for full and partial depth patch. The payment will be full compensation for saw cutting, milling, grinding, removal, disposal, trimming of the existing pavement, subgrade preparation, placing all materials including tack coat, steel plates, emergency filler, and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.		
	Partial Depth Patching and Full Depth Patching will be measured and paid for at the Contract Unit Price per square yard or per ton as specified in the Contract Documents. The payment will be full compensation for furnishing, hauling, placing all material, additional removal of pavement above the aggregate base, and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.	SY	UP
	Removal of unsuitable material and refill will be measured and paid for at the Contract Unit Price per cubic yard. The payment will also include excavation and disposal of unsuitable material, backfilling with aggregate, and compaction.	CY	UP
32 01 17.61	Sealing Cracks in Asphalt Paving: This Work shall consist of cleaning and filling cracks one eighth inch to one and three quarter inches (1/8" to 1 3/4") wide in hot mix asphalt (HMA) pavement as specified in the Contract Documents or as directed by the Engineer. Cracks less than one eighth inch (1/8") wide shall not be filled. Distressed areas shall be repaired as specified herein and as directed by the Engineer. Cracks more than one and three quarters inches (1 3/4") wide and map, edge or alligator cracks requiring major repairs are not included in this Specification; refer to 32 01 17.59, (Hot Mix Asphalt Patches). The payment will be full compensation for furnishing, hauling, and placing of all materials, crack shaping, crack filling, the removal and disposal of old filler and debris, and for all material, labor, equipment, tools, and incidentals necessary to complete the Work. Payment will not be made for wasted material.		
	Filler removal, saw cutting, crack shaping, and crack filler will be measured and paid for at the Contract Unit Price per linear foot.	LF	UP
	Patching material for cracks will be measured and paid for per linear foot regardless of the width or depth of the crack.	LF	UP
32 01 29.64	Repairing Portland Cement Concrete Pavement: This Work shall consist of repairing plain, conventionally reinforced, or continuously reinforced Portland cement concrete pavement as specified in the Contract Documents or as directed by the Engineer. Repairs are either Type I, six foot (6') to less than fifteen feet (15') in length or Type II, fifteen feet (15') and greater in length. The minimum repair length shall be six feet (6'). The payment will be full compensation for saw cuts, furnishing, hauling, placing of all materials, removal and disposal of old concrete, grout, drilled holes, chairs, all tie devices, reinforcement, epoxy coating, steel plates, emergency filler, joint sealing, and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.		
	Portland Cement Concrete Pavement Repairs will be measured in place and paid for at the Contract Unit Price for one or more of the items listed below of as specified in the Contract Documents. 1. Plain Portland Cement Concrete Pavement Type I Repairs, per square yard. 2. Plain Portland Cement Concrete Pavement Type II Repairs, per square yard. 3. Conventionally Reinforced Portland Cement Concrete Pavement Type I Repairs, per square yard. 4. Conventionally Reinforced Portland Cement Concrete Pavement Type II Repairs, per square yard. 5. Continuously Reinforced Portland Cement Concrete Pavement Type I Repairs, per square yard. 6. Continuously Reinforced Portland Cement Concrete Pavement Type II Repairs, per square yard.	SY	UP
	Removal of unsuitable material and refill, per cubic yard. The payment will also include excavation and disposal of unsuitable material, backfilling with aggregate, and compaction.	CY	UP
	Subgrade Drains will be measured and paid for as specified in the applicable portions of 33 46 16.19, (Pipe Underdrains and Outlets).	As specified	As Specified
	Shoulder Repairs will be measured and paid for at the Contract Unit Price per square yard. Repairs to existing shoulders necessitated by the placement of forms are also included.	SF	UP

32 01 30.10	Patch Existing Pavement and Reset Utility Service: The Work performed in conjunction with the placement or repair of utility lines consists of trenching, shoring, sub-grade replacement, base course replacement, surface course replacement and pavement marking replacement for composite pavements, PCC pavements, flexible pavements, curb replacement, combination curb and gutter replacement, sidewalk replacement, the adjusting and resetting of all manhole frames, inlet frames and other utility service structures in accordance with these Specifications, Plans and/or standards. The prices shall constitute full compensation for the placing all materials, tack coat, steel plates, temporary filler, mixing, placing and furnishing of the patch complete in place as herein specified including all materials, reinforcement and the tie devices, the preparation of materials, concrete, tools, equipment, labor and all other items necessary to complete the Work.	
	The cost of the saw cutting, milling, grinding, removal, disposal, trimming of the existing surfacing and base, subgrade preparation and the resetting of manhole frames, inlet frames and other utility service structures, shall be included in the Contract Unit Price Bid for the particular type of base course being installed.	No Incidental
	The concrete will be measured per cubic yards of concrete pavement completed and accepted. Measurements will be based on field measurement of areas to be filled.	CY UP
	Method of Measurement for correction of unsatisfactory subgrade will be made according to the particular item involved.	As specified As Specified
	The resetting of manholes, inlets and other utility service structures will not be measured but be incidental to the work..	No Incidental
	The quantity of concrete pavement or base shall be paid for at the Contract Unit Price Bid per cubic yard for the applicable unity of cement concrete.	CY UP
	The quantity of hot mix asphalt pavement or base shall be paid for at the Contract Unit Price Bid per ton for the applicable unit of Hot Mix Asphalt.	Ton UP
32 11 23.10	Aggregate Base Course: This Work shall consist of constructing base courses using one of the following as specified in the Contract Documents or as directed by the Engineer: 1. Graded aggregate without a stabilizing agent. 2. Plant mixed graded aggregate with a portland cement stabilizing agent. 3. Bank run gravel. 4. Sand aggregate. The payment will be full compensation for all aggregate, furnishing, hauling, placing, curing, and for all material, labor, equipment, tools, and incidentals necessary to complete the Work. Surface area measurements will be based on the width of the base as specified in the Contract Documents and the actual length measured along the centerline of the base surface.	
	Graded aggregate base course, graded aggregate base course stabilized with cement, bank run gravel base course, and sand aggregate base course will be measured and paid for at the Contract Unit Price per square yard.	SY UP
	The temporary graded aggregate base wedge constructed for maintaining the four to one (4:1) or flatter slope, compaction, and removal of the material, will not be measured but the cost will be incidental to the graded aggregate base course item.	No Incidental
	The portland cement stabilizing agent and the emulsified asphalt for seal coat will not be measured but the cost will be incidental to the graded aggregate base course stabilized with cement item.	No Incidental
	Bank Run Gravel Base: Material manipulation or addition of chemical additives will not be measured but the cost will be incidental to the bank run gravel base course item.	No Incidental
	Calcium or magnesium chloride will be measured and paid for at the Contract Unit Price per square yard or if specified in the Contract Documents, at the Contract Unit Price per ton.	SY or Ton UP

32 11 23.11	Aggregate for Maintenance of Traffic: This Work shall consist of utilizing aggregate for maintenance of traffic within the existing facilities as specified in the Contract Documents or as directed by the Engineer.		
	Crusher Run Aggregate: CR-6 for maintenance of traffic, bank run gravel subbase for maintenance of traffic, and graded aggregate base for maintenance of traffic will be measured and paid for at the Contract Unit Price per ton. The payment will be full compensation for all aggregate, hauling, placing, compacting, removal, rehandling, reworking, and disposal, and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.	Ton	UP
	When aggregate is part of any base or pavement course used for the Construction and maintenance of temporary detours, approaches, crossings and widenings, the item of Work will be measured and paid for in conformance with 32 11 23.10, (Aggregate Base Course).	As specified	As Specified
	Aggregate for maintenance of traffic when used for temporary and permanent patching at pipe culverts and utilities will not be measured but the cost will be incidental to the pertinent pipe culvert or utility item.	No	Incidental
32 11 33	Cement Treated Base Course: This Work shall consist of constructing soil-cement base course using a combination of soil and portland cement, uniformly mixed, moistened, compacted, shaped and sealed. Unless otherwise specified in the Contract Documents, the soil, cement and water may be mixed in a plant or mixed in place, at the Contractor's option. The payment will be full compensation for furnishing, hauling, mixing, placing, compacting, watering, control strip, emulsified asphalt, and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.		
	Soil-Cement Base Course will be measured and paid for at the Contract Unit Price per square yard. Surface area measurements will be based on the width of the base as specified in the Contract Documents and the actual length measured along the centerline of the base surface.	SY	UP
	Portland cement for soil-cement base course will be measured and paid for at the Contract Unit Price per ton.	Ton	UP
32 12 16.13	Plant Mix Asphalt Pavement: This Work shall consist of constructing hot mix asphalt (HMA) pavement as specified in the Contract Documents. See Specification for information for Price Adjustments.		
	Hot mix asphalt pavement will be measured and paid for at the Contract Unit Price per ton. The payment will be full compensation for furnishing, hauling, placing all materials including antistripping additive, tack coat, control strip, pot hole and spall repairs, setting of lines and grades where specified, and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.	Ton	UP
	Placement and removal of the temporary tie-in where hot mix asphalt is being applied to the traveled way carrying traffic will not be measured but the cost will be incidental to the pertinent hot mix asphalt item.	No	Incidental
	Removal of the existing pavement or structure for the final tie-in will be measured and paid for at the Contract Unit Price for the pertinent items used. The hot mix asphalt for the final tie-in will be measured and paid for at the Contract Unit Price for pertinent hot mix asphalt item.	As specified	UP
	Adjustment of existing visible manholes, valve boxes, inlets or other structures will not be measured but the cost will be incidental to the hot mix asphalt item.	No	Incidental
	Adjustment of existing manholes, valve boxes, inlets or other Structures that are encountered below the existing grade will be considered for payment in conformance the Contract Documents.	As specified	As Specified
	Removal of existing raised pavement markers will not be measured but the cost will be incidental to the hot mix asphalt item.	No	Incidental
	Removal of existing raised pavement markers that are encountered below the existing pavement will be considered for payment in conformance with the Contract Documents.	As specified	As Specified
	See the Specification for information on price adjustments.	As specified	As Specified

32 12 16.14	Gap Graded Hot Mix Asphalt: This Work shall consist of the placement of a gap-graded hot mix asphalt surface (GGHMA) as specified in the Contract Documents. GGHMA shall conform to 32 12 16.13, (Plant Mix Asphalt Pavement), except as specified herein.		
	Gap-Graded Hot Mix Asphalt will be measured and paid for at the Contract Unit Price per ton, complete and in place. The payment will be full compensation for furnishing, hauling, preparing tack coat, placing all materials, material transfer vehicle, anti-stripping additive, tack coat, control strips, and for all material, labor, equipment, tools, setting of lines and guides where specified, and incidentals necessary to complete the Work. The paid tonnage will be based on the combined bulk specific gravity of the aggregate (Gsb) mixture used. When the Gsb is within two and seven tenths to two and eight tenths (2.70 – 2.80) the paid tonnage is the tonnage used; when outside this range use the formula contained in the Specification to determine the pay tonnage. See Specification for price adjustment information.	Ton	UP
	Material produced for the demonstration will not be paid for but the cost will be incidental to the item GGHMA.	No	Incidental
	The cost of the control strip, if constructed, will not be measured but will be incidental to the pertinent hot mix asphalt item.	No	Incidental
32 12 16.15	Hot Mix Asphalt (HMA) for Maintenance of Traffic: This Work shall consist of utilizing HMA pavement for maintenance of traffic within the existing facilities as specified in the Contract Documents or as directed by the Engineer.		
	Hot mix asphalt for maintenance of traffic will be measured and paid for at the Contract Unit Price per ton. The payment will be full compensation for all tack coat, crack filler, hauling, placing, compacting, maintaining, removal, rehandling, reworking and disposal, and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.	Ton	UP
	When hot mix asphalt is part of any base or pavement course used for the Construction and maintenance of temporary detours, approaches, crossings, and widenings, the item of Work will be measured and paid for in conformance with 32 12 16.13, (Plant Mix Asphalt Pavement).	As specified	As Specified
	Hot mix asphalt for maintenance of traffic when used for temporary and permanent patching at pipe culverts and utilities will not be measured but the cost will be incidental to the pertinent pipe culvert or utility item.	No	Incidental
32 13 13.13	Exposed Aggregate Sidewalks: Exposed aggregate sidewalks shall be used in the pedestrian ramps, as shown on the Contract Plans or as directed by the Engineer. Within the Construction limits of new sidewalks, the Contractor shall adjust all surface fixtures along the line of Work to true line and grade before the sidewalk is placed.		
	This item shall be paid for at the Contract Unit Price per square foot for exposed aggregate sidewalk. The payment will be full compensation for all excavation, backfill, disposal of excess or unsuitable material, forms, reinforcement when specified, joints, sealer, compaction, curing, finishing, and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.	SF	UP
	The removal and disposal of unsuitable material will be measured and paid for at the Contract Unit Price for class 2 excavation, which price shall include the cost of using suitable excavation as replacement material. When borrow or selected backfill is authorized as replacement material, payment will be made at the Contract Unit Price Bid for the respective items. All excavation above the top surface of the sidewalk, will be classified in the pertinent class of excavation. See Specification 31 23 16.10.	As specified	UP
	When the existing sidewalk is removed and replaced with a new sidewalk, the cost to remove the existing sidewalk will be incidental to the Contract Unit Price for sidewalk.	No	Incidental
	Adjusting of surface fixtures within the Construction limits of a new sidewalk shall not be measured. Adjusting of surface fixtures within the limits of new sidewalk Construction shall be included in the cost of exposed aggregate sidewalk.	No	Incidental

32 13 13.14	Hot Mix Asphalt or Concrete Sidewalks: This Work shall consist of constructing hot mix asphalt (HMA) or concrete sidewalks and sidewalk ramps as specified in the Contract Documents or as directed by the Engineer. The payment will be full compensation for all excavation, backfill, disposal of excess or unsuitable material, forms, reinforcement when specified, joints, sealer, compaction, curing, finishing and for all material, labor, equipment, tools and incidentals necessary to complete the Work.		
	The removal and disposal of unsuitable material will be measured and paid for at the Contract Unit Price for class 2 excavation, which price shall include the cost of using suitable excavation as replacement material. When borrow or selected backfill is authorized as replacement material, payment will be made at the Contract Unit Price Bid for the respective items. See Specification 31 23 16.10.	As specified	UP
	When the existing sidewalk is removed and replaced with a new sidewalk, the cost to remove the existing sidewalk will be incidental to the Contract Unit Price for sidewalk.	No	Incidental
	Concrete Sidewalks will be measured and paid for at the Contract Unit Price per square foot of finished surface including sidewalk ramps. Sidewalk ramps with an exposed aggregate finish shall be measured and paid for as specified in 32 13 13.13, (Exposed Aggregate Sidewalks).	SF	UP
	Hot Mix Asphalt Sidewalks will be measured and paid for at the Contract Unit Price per ton for the mixture placed.	Ton	UP
	Adjusting of surface fixtures within the limit of new sidewalk Construction shall be incidental to the sidewalk Construction.	No	Incidental
32 13 13.33	Plain and Reinforced Portland Cement Concrete Pavements: This Work shall consist of constructing plain and reinforced portland cement concrete pavements as specified in the Contract Documents or as directed by the Engineer.		
	Plain and reinforced portland cement concrete pavements will be measured and paid for at the Contract Unit Price per square yard for the pertinent portland cement concrete pavement item. The square yard measurement will be computed on the basis of plan width and as-built length measured along the pavement centerline. The payment will be full compensation for all concrete, forms, reinforcement steel, chairs, epoxy coating, finishing, curing, joints, joint construction, saw cutting, and joint sealing and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.	SY	UP
	Pavement Thickness Price Adjustment. Payment for areas that are accepted at a reduced price for deficient thickness will be adjusted by the factors shown in the table in Specification 32 13 13.33. There will be no additional payment for excess thickness.	Per Inch	As Specified
32 13 13.43	Continuously Reinforced Portland Cement Concrete Pavement: This Work shall consist of constructing continuously reinforced portland cement concrete pavement on a prepared subgrade as specified in the Contract Documents.		
	Continuously Reinforced Portland Cement Concrete Pavement will be measured and paid for at the Contract Unit Price per square yard. The square yard measurement will conform to 32 13 13.33, (Plain and Reinforced Portland Cement Pavement). The payment will be full compensation for all concrete, forms, reinforcement steel, chairs, epoxy coating, finishing, curing, joints, joint construction, saw cutting, and joint sealing, and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.	SY	UP
	Pavement Thickness Price Adjustment. Refer to 32 13 13.33, (Plain and Reinforced Portland Cement Pavement).	Per Inch	As Specified
	Terminal Joints. Terminal Joints will be measured and paid for at the Contract Unit Price per linear foot. The payment will be full compensation for all steel beams, stiffener plates, end plates, drilled holes, welding, cutting, styrofoam, joint filler, concrete, reinforcement, bond breaker, and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.	LF	UP

32 13 73.12	Joint Sealing of Portland Cement Concrete Pavement: This Work shall consist of cleaning and sealing portland cement concrete pavement joints as specified in the Contract Documents or as directed by the Engineer.		
	Joint Sealing of Portland Cement Concrete Pavement will be measured and paid for at the Contract Unit Price per linear foot of joint unless otherwise specified in the Contract Documents. The payment will be full compensation for cleaning existing joints, furnishing, hauling, placing all materials including preformed joint filler, joint sealer, backer rod, and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.	LF	UP
	Joint Construction and sealing will not be measured but the cost will be incidental to the Contract Unit Price for the pertinent portland cement concrete pavement item.	No	Incidental
32 15 41	Chip Seal Surface Treatment: This Work shall consist of applying one or two (1 or 2) seal coats or a prime coat followed by one or two (1 or 2) seal coats as specified in the Contract Documents or as directed by the Engineer. The seal coat shall consist of applying emulsified asphalt followed by an application of aggregate. The prime coat, when required, shall consist of preparing and treating an existing surface with emulsified asphalt. Payment will be full compensation for the foundation preparation, furnishing, hauling, preparing, removing excess aggregate, placing materials, and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.		
	No. 7 Aggregate for Single Coat Chip Seal Surface Treatment will be measured and paid for at the Contract Unit Price per ton.	Ton	UP
	No. 8 Aggregate for Second Coat Chip Seal Surface Treatment will be measured and paid for at the Contract Unit Price per ton.	Ton	UP
	Emulsified Asphalt for Seal Coat will be measured and paid for at the Contract Unit Price per gallon. The actual number of gallons of emulsified asphalt distributed will be corrected to the corresponding volume at sixty degrees (60°) F as determined by use of conversion tables furnished by the City.	Per Gallon	UP
32 16 13.13	Cast in Place Concrete Curbs and Gutters (Curb, Combination Curb and Gutter and Monolithic Median): This Work shall consist of constructing concrete curb, concrete combination curb and gutter, concrete curb openings, concrete monolithic median, and hot mix asphalt (HMA) curb as specified in the Contract Documents or as directed by the Engineer. The payment will be full compensation for all concrete, hot mix asphalt, forms, excavation, backfill, disposal of excess material, drainage openings, joint sealer, tack coat, and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.		
	The removal and disposal of unsuitable material will be measured and paid for at the Contract Unit Price for class 2 Excavation, which price shall include the cost of using suitable excavation as replacement material. When borrow or selected backfill is authorized as replacement material, payment will be made at the Contract Unit Price Bid for the respective items.	As Specified	UP
	When existing curb or combination curb and gutter is removed and replaced with new curb or combination curb and gutter, the cost of the removal will be incidental to the Contract Unit Price for the new item.	No	Incidental
	Curb, Combination Curb, Gutter and Monolithic Median will be measured and paid for at the Contract Unit Price per linear foot. Hot Mix Asphalt Curbs, Concrete Curbs, and Concrete Combination Curb and Gutter will be measured along the front face of the curb. Concrete monolithic median will be measured along the centerline of the finished top of median.	LF	UP
	Concrete Curb or Concrete Combination Curb and Gutter Openings will be measured and paid for at the Contract Unit Price per each.	EA	UP

32 16 40.13	Granet Curbs: The Contractor will be required to furnish and install granite curbing as indicated on the plan or as directed by the Engineer. All Work shall be in reasonably close conformity with the lines and grades shown on the Plans or as established by the Engineer.		
	The installation of granite curb shall be paid at the Contract Unit Price Bid per linear foot of "granite curb". This price shall be full compensation for the cost of furnishing all materials, equipment, fill, concrete, excavation, saw cutting, expansion joint material, and labor necessary to complete the Work. Payment will be made for the actual number of linear feet installed as called for in the Plans or as directed by the Engineer.	LF	UP
32 17 13.10	Wheel Stops: This Work shall consist of furnishing, placing and anchoring preformed wheel stops as specified in the Contract Documents or as directed by the Engineer.		
	Wheel Stops will be measured and paid for at the Contract Unit Price per each. The payment will be full compensation for all anchors, material, labor, equipment, tools, and incidentals necessary to complete the Work.	EA	UP
32 17 23	Permanent Pavement Markings: This Work shall consist of furnishing and applying permanent pavement markings to various surfaces at locations and patterns as specified in the Contract Documents or as directed by the Engineer. This includes line markings, letters, numbers, arrows, and symbols. Payment will be full compensation for all pavement preparation, furnishing and placing of markings, testing, and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.		
	Permanent Pavement Markings will be measured and paid for at the Contract Unit Price per linear foot for the color and widths specified.	LF	UP
	Permanent Pavement Marking Letters, Symbols, Arrows, and Numbers will be measured and paid for at the Contract Unit Price per each.	EA	UP
	Removal of Existing Permanent Pavement Markings will be measured and paid for per stripe at the Contract Unit Price per linear foot, regardless of width.	LF	UP
	Removal of Existing Permanent Pavement Marking Letters, Symbols, Arrows, and Numbers will be measured and paid for at the Contract Unit Price per each.	EA	UP
	Removal, Replacement, or Corrective Actions. Any additional cost (including Maintenance of Traffic) for the removal of markings that are incorrectly or inaccurately installed or failed the observation period, shall be at no additional cost to the City. In addition, the current road user's fee will be applied when traffic disruption occurs during corrective actions.	No	Incidental
32 17 23.14	Temporary Pavement Markings: This Work shall consist of furnishing, installing and removing temporary pavement markings as specified in the Contract Documents or as directed by the Engineer. These markings shall include lines, letters, numbers, arrows and symbols. Payment will be full compensation for furnishing, placing, complete removal of lines, letters, numbers, arrows, symbols and the removal of all residues. In addition, payment will cover maintenance and replacement during the one hundred eighty (180) day period and for all material, labor, equipment, tools and incidentals necessary to complete the Work.		
	Payment for Removable Preformed Pavement Markings, Removal of Removable Preformed Pavement Markings, Nontoxic Lead Free Waterborne Pavement Marking Paint and the Removal of Existing Pavement Markings will be measured and paid for using one or more of the items below and as specified in the Contract Documents.	As specified	As Specified
	Removal and replacement of temporary pavement markings required beyond the one hundred eighty (180) day period will be measured and paid for at the Contract Unit Price for the pertinent temporary pavement marking item.	As specified	UP
	Temporary markings replaced during the one hundred eighty (180) day period as a result of plowing (as determined by the Engineer) will be paid for at the Contract Unit Price for the pertinent temporary marking item.	As specified	UP
	Nontoxic Lead Free Waterborne Pavement Marking Paint will be paid for at the Contract Unit Price per linear foot.	LF	UP
Cont'd			

32 17 23.14 cont'd	Removable Preformed Pavement Line Markings will be paid for at the Contract Unit Price per linear foot.	LF	UP
	Removable Preformed Letters, Symbols, Arrows and Numbers will be paid for at the Contract Unit Price per each.	EA	UP
	Removal of Removable Preformed Pavement Markings, any width, will be paid for at the Contract Unit Price per linear foot.	LF	UP
	Removal of Removable Preformed Letters, Symbols, Arrows and Numbers will be paid for at the Contract Unit Price per each.	EA	UP
	Removal of Existing Pavement Line Markings, any width, will be paid for at the Contract Unit Price per linear foot.	LF	UP
	Removal of Existing Letters, Symbols, Arrows and Numbers will be paid for at the Contract Unit Price per each.	EA	UP
32 17 23.24	Temporary Raised Pavement Markings (RPMs): This Work shall consist of furnishing, installing and removal, as necessary, of temporary raised pavement markers as specified in the Contract Documents or as directed by the Engineer. The payment will be full compensation for all material, labor, equipment, tools, and incidentals necessary to complete the Work. Increases or decreases in quantities will not be a basis for renegotiation of the Contract Unit Price.		
	Temporary Raised Pavement Markers will be measured and paid for at the Contract Unit Price per each.	EA	UP
	Removal of Temporary Raised Pavement Markers will be measured and paid for at the Contract Unit Price per each.	EA	UP
	The City will reimburse the Contractor at the Contract Unit Price per each marker damaged by snowplow operations.	EA	UP
32 31 13	Chain Link Fence: This Work shall consist of furnishing and erecting chain link fence as specified in the Contract Documents or as directed by the Engineer. Payment will be full compensation for all material, labor, equipment, tools and incidentals necessary to complete the Work.		
	The removal of privately owned fence or other property from within the City's right-of-way will not be measured but the cost will be incidental to the Contract lump sum price for clearing and grubbing.	No	Incidental
	When an item for Clearing and Grubbing is not specified in the Contract Documents, clearing and grubbing will not be measured but the cost will be incidental to the Contract Unit Price for the pertinent chain link fence item.	No	Incidental
	Chain Link Fence will be measured and paid for at the Contract Unit Price per linear foot for the actual number of linear feet measured to centers of end posts.	LF	UP
	Terminal Posts (End, Pull and Corner Post) will be measured and paid for at the Contract Unit Price per each for the size and type specified.	EA	UP
	Gates will be measured and paid for at the Contract Unit Price per each as complete units of the size and type specified.	EA	UP
32 31 23.10	Temporary Orange Construction Fence: This Work shall consist of furnishing and installing new or like new, temporary orange mesh Construction fence. The fence shall be used where specified in the Contract Documents or where directed by the Engineer. This fence is not a safety barrier. The payment will be full compensation for the installation, removal, maintenance, and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.		
	Temporary Orange Construction Fence will be measured and paid for at the Contract Unit Price per linear foot for the actual number of linear feet measured to the centers of end posts.	LF	UP
	Remove and Reset Temporary Orange Construction Fence will be measured and paid for at the Contract Unit Price per linear foot.	LF	UP

32 32 13	Cast in Place Concrete Retaining Walls: This Work shall consist of the Construction of cast-in-place reinforced concrete footings and stems conforming to the American Association of State Highway and Transportation Officials (AASHTO) definitions of rigid retaining walls. The retaining wall shall be constructed as shown in the Contract Documents. Included in the retaining wall shall be all anchorage assemblies for mounting noise barriers when retaining wall mounted noise barriers are specified in the Contract Documents. All components shall be as specified unless prior approval for alternatives is obtained from the Engineer. When piles or drilled shafts (caissons) are specified in the Contract Documents, they shall conform to Sections 31 62 00, (Driven Piles) and 31 64 16, (Drilled Shafts-Caissons) respectively.		
	Retaining walls will not be measured but will be paid for at the Contract lump sum price for the pertinent retaining wall item. The payment will be full compensation for all piles and caissons (unless specific items are included in the Contract Documents), footings, forms and form removal, architectural treatment, reinforcement steel, concrete, curing, anchorage assemblies, stains and coatings, excavation, sheeting and shoring, backfill (including size no. 57 stone and geotextiles for alternate retaining walls) and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.	No	LS
	When specific items for Piles for Retaining Walls are included in the Contract Documents, they will be measured and paid for as specified in the 31 62 00, Part 4, (Driven Piles).	LF	UP
	When specific items for drilled shafts (caissons) for retaining walls are included in the Contract Documents, they will be measured and paid for as specified in 31 64 16, Part 4, (Drilled Shafts-Caissons).	LF	UP
32 35 16	Noise Barriers: The Standard Noise Barrier System shall consist of precast concrete panels, steel or concrete posts, concrete foundations, fire hose connections, doors, and hardware necessary to construct a noise barrier as specified in the Contract Documents. The Contractor has the option of supplying steel or concrete posts, but the same type of post shall be used throughout an entire noise wall. All components shall be as specified unless prior approval for alternatives is obtained from the Engineer. Payment will be full compensation for all material, labor, equipment, tools and incidentals necessary to complete the Work. Modifications such as an increase or decrease in the size or number of grade beams, drilled shafts (caissons), or retaining walls, special anchorages, conflicts with utilities or other obstructions when the utilities or obstructions were noted in the Contract Documents, or any other modifications required due to the Contractor's selection of an alternate spacing, or a pre-approved alternate noise wall when permitted, will be incidental to the item.		
	Noise Barrier System panels will be measured and paid for at the Contract Unit Price per square foot of wall including posts, panels, architectural and noise absorptive finishes, stains and coatings, base plates, anchor assemblies (except when noise barriers are mounted on retaining walls), Construction templates, temporary supports, doors, fire hose connections, excavation, backfill, and hardware. Measurement will be based on the as-planned dimensions, using the length along the face of the wall times the panel height.	SF	UP
	Grade Beams will not be measured but will be paid for at the Contract lump sum price, which shall also include excavation, reinforcement, concrete, and backfill.	No	LS
	Drilled Shafts (Caissons) will be measured and paid for as specified in 31 64 16, Part 4, (Drilled Shafts-Caissons).	As specified	As Specified
	Retaining walls will be measured and paid for as specified in 32 32 13, Part 4, (Cast-in-Place Concrete Retaining Walls).	As specified	As Specified

32 90 00.01	Planting Trees, Shrubs, Vines and Seedling Stock: This Work shall consist of furnishing and planting trees, shrubs, vines and seedling stock and all plant establishment operations to complete the Work as specified in the Contract Documents or as directed by the Engineer and Tree Protection Expert. Work shall be done to landscape contractor association (LCB) current Specifications and landscape Specifications guidelines.		
	Planting trees, shrubs, vines and seedling stock will be measured and paid for at the Contract Unit Price per each item specified in the Contract Documents. The payment will be full compensation for all tree supports, watering during the Construction period and for all material, labor, equipment, tools and incidentals necessary to complete the Work. If at any time during the Contract period any plants become unacceptable, they shall be replaced at no additional cost to the City.	EA	UP
	Mulching: Composted wood chips or other approved mulching materials within the planting beds will be measured and paid for at the Contract Unit Price per square yard. The measurement will be computed on the surface area of the specified thickness before settling or as directed by the Engineer. The payment will be full compensation for all mulch, material, labor, equipment, tools and incidentals necessary to complete the Work.	SY	UP
	Additional Watering of Plants: Additional watering of plants will be measured and paid for during the plant establishment period at the Contract Unit Price per one thousand (1000) gallons of water applied to the plants.	Per 1000 gallons	UP
	Plant Relocation: Plant relocation will be measured and paid for at the Contract Unit Price per cubic foot for the specified planting pit. The payment will be full compensation for plant relocating, placing all backfill, seeding of damaged turf and for all material, labor, equipment, tools and incidentals necessary to complete the Work.	CF	UP
	Abandoned Planting Pits: Abandoned planting pits will be measured and paid for at the Contract Unit Price per cubic foot measured prior to backfilling. The payment will be full compensation for placing all backfill, seeding of damaged turf and for all material, labor, equipment, tools and incidentals necessary to complete the Work.	CF	UP
	Plant Refertilization: Plant refertilization will be measured and paid for at the Contract Unit Price per one thousand (1000) gallons of liquid fertilizer mixture applied to the plants in conformance with paragraph 4.C. The payment will be full compensation for furnishing fertilizer, water and for all material, labor, equipment, tools and incidentals necessary to complete the Work.	Per 1000 gallons	UP
32 91 16.16	Soil Stabilization: This Work shall consist of furnishing, placing and securing matting on seeded areas, as specified in the Contract Documents or as directed by the Engineer.		
	The matting will be measured and paid for at the Contract Unit Price per square yard for type A and type B for the area actually covered. If the top netting on the Type A matting degrades before the disturbed area is fully stabilized the Contractor shall replace the matting and reseed the affected area at no additional cost to the City. The payment will be full compensation for all matting furnished and placed, staples, fasteners and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.	SY	UP
	Where required, placing salvaged topsoil, placing furnished topsoil, seeding and mulching and overseeding will be measured and paid for separately at the Contract Unit Price for the respective item specified in the Contract Documents.	As specified	UP

32 92 00	Turf and Grasses: This Work shall consist of furnishing and placing fertilizer, temporary seed, mulch, wood cellulose fiber and temporary straw mulch on cuts, fills and other soil areas, which cannot be shaped and permanently vegetated for an extended period of time as specified in the Contract Documents or as directed by the Engineer. Payment will be full compensation for all material, labor, equipment, tools and incidentals necessary to complete the Work. Repairs due to the Contractor's negligence as determined by the Engineer shall be done at no additional expense to the City. After acceptance, mulch requiring replacement, as directed by the Engineer, will be paid for as additional Work.		
	Temporary Seeding will be measured and paid for at the Contract Unit Price per pound of seed.	LB	UP
	Temporary Wood Cellulose Mulching will be measured and paid for at the Contract Unit Price per ton of wood cellulose fiber.	Ton	UP
	Temporary Straw Mulching will be measured and paid for at the Contract Unit Price per square yard of temporary straw mulching.	SY	UP
32 92 19.02	Woody Shrub Seeding: This Work shall consist of soil preparation, seeding, fertilizing, mulching, liming as required and refertilizing all areas designated for woody shrub seeding as specified in the Contract Documents, 32 92 23.01, (Turf Establishment) or as directed by the Engineer.		
	Woody shrub seeding will be measured and paid for at the Contract Unit Price for the items below as specified in the Contract Documents. The payment will be full compensation for all material, labor, equipment, tools, and incidentals necessary to complete the Work.	As specified	UP
	Cover Companion Seed Mix per pound. City furnished woody shrub seed mix, the Contractor furnished companion seed, out of season seed, 5-20-20 fertilizer and mulch will not be measured but the cost will be incidental to this item. 1. Liming Nontopsoiled Areas per ton. 2. Applying 38-0-0 (UF) Fertilizer per pound. 3. Refertilizing 0-20-20 and 38-0-0 (UF) per pound for the combined weight of both fertilizers.	No	Incidental
32 92 19.03	Wildflower Seeding: This Work shall consist of wildflower seeding as specified in the Contract Documents or as directed by the Engineer.		
	Wildflower Seeding will be measured and paid for at the Contract Unit Price per square yard. The payment will be full compensation for herbicide, marking dye, mowing, soil preparation and seeding (excluding the cost of wildflower and companion seed) and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.	SY	UP
32 92 23	sodding: This Work shall consist of soil preparation, liming, fertilizing, watering, and placing grass sod on prepared areas, as specified in the Contract Documents or as directed by the Engineer.		
	Sodding will be measured and paid for at the Contract Unit Price per square yard. The payment will be full compensation for all sod, initial watering, staking, liming, fertilizing, refertilizing and for all material, labor, equipment, tools and incidentals necessary to complete the Work.	SY	UP
	Additional Watering of Sod: Additional Watering of Sod will be measured and paid for at the Contract Unit Price per one thousand (1000) gallons of water applied to the sod. Water will be measured by means of satisfactorily installed meters or by measurements of tank capacities or by acceptable documentation of tanks of predetermined capacity. The Contractor shall furnish the Engineer's representative with measurement and capacities to provide a complete and accurate record of the quantity of water furnished and applied. The payment will be full compensation for all water, material, labor, equipment, tools and incidentals necessary to complete the Work. No compensation will be allowed for water wasted or excess watering as determined by the Engineer.	Per 1000 gallons	UP

APPENDIX D

BID ITEMS

32 92 23.01	Turf Establishment: This Work shall consist of soil preparation, seeding, fertilizing, liming, mulching, overseeding, refertilization and mowing all areas designated for turf establishment as specified in the Contract Documents or as directed by the Engineer. Liming and fertilizing rates will be determined by the Nutrient Management Plan.		
	Turf Establishment will be measured and paid for at the Contract Unit Price for the items as specified in the Contract Documents. The payment will be full compensation for all material, labor, equipment, tools, and incidentals necessary to complete the Work.	As specified	UP
	Permanent Seeding Areas per square yard. This item includes preparing soil and seedbed, applying seed (mixes and additives), fertilizers outlined in the Nutrient Management Plan and mulch.	SY	UP
	Liming Salvaged Topsoil and Nontopsoiled Areas per ton.	Ton	UP
	Fertilizing Nontopsoiled Areas with 38-0-0 (urea form) fertilizer per pound.	LB	UP
	Overseeding Permanent Seeding Areas per pound of seed.	LB	UP
	Refertilizing Topsoiled Areas per pound for the combined weight per pound of 5-20-20 and 38-0-0 (urea form) fertilizers.	LB	UP
	Refertilizing Nontopsoiled Areas per pound for the combined weight per pound of 5-20-20 and 38-0-0 (urea form) fertilizers.	LB	UP
	Mowing per hour. This item includes tractor and hand mowing.	Per hour	UP
32 93 23	Plants and Bulbs (Planting Annuals, Perennials, Fall Planted Bulbs and Ornamental Grasses): This Work shall consist of furnishing and planting annuals, perennials, fall planted bulbs, ornamental grasses and all plant establishment operations to complete the Work as specified in the Contract Documents or as directed by the Engineer.		
	Installation of annuals, perennials, fall planted bulbs and ornamental grasses will be measured and paid for at the Contract Unit Price per each item as specified in the Contract Documents. The payment will be full compensation for all plants, bulbs, initial watering, fertilizing, replacements, seasonal maintenance and for all material, labor, equipment, tools, and incidentals necessary to complete the Work. If at any time during the Contract period any plants become unacceptable, they shall be replaced at no additional cost to the City.	EA	UP
	Shredded hardwood bark mulch within the planting beds will be measured and paid for at the Contract Unit Price per square yard. The measurement will be computed on the surface area of the specified thickness before settling or as directed by the Engineer. The payment will be full compensation for all mulch, material, labor, equipment, tools and incidentals necessary to complete the Work.	SY	UP
	Additional Watering of Plants. Additional watering of plants will be measured and paid for at the Contract Unit Price per one thousand (1000) gallons of water applied to the planting beds. Water will be measured as specified in 32 92 23, Part 4, (Sodding).	Per i1000 gallons	UP
	Plant refertilization will be measured and paid for at the Contract Unit Price per one thousand (1000) gallons of liquid fertilizer mixture applied to the plant beds in conformance with paragraph 4.C. The payment will be full compensation for furnishing fertilizer, water and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.	Per i1000 gallons	UP

32 93 43	Tree Root Aeration: This item shall consist of furnishing and placing the necessary aggregate and pipe for the protection and aeration of the roots of trees, shrubs and other woody plants specifically designated for such treatment in conformity with the requirements of the Plans and Specifications.		
	Aggregate for this item will be measured on the basis of the volume of material acceptably placed and no deductions will be made for the volume of any pipe installed in it. "Aggregate for Tree Root Aeration" will be paid for on the basis of the Contract Unit Price per cubic yard for the volume of such material acceptably installed and such price and payment shall be full compensation for all labor, material, equipment and incidentals necessary to complete the item as specified, except pipe, but including the mulch covering which will not be measured or otherwise paid for.	CY	UP
	Plain or perforated pipe will each be measured on the basis of the length of straight section acceptably installed. Pipe shall be paid for at the Contract Unit Price per linear foot for straight clay pipe, plain or perforated which price and payment will be full compensation for all labor, materials, equipment and incidentals necessary to satisfactorily complete the Work, including the necessary plugs and stoppers and the sealing of the joints.	LF	UP
	Special fitting will be measured per each at the Contract Unit Price, which price and payment will be full compensation for all labor, materials, equipment and incidentals necessary to satisfactorily complete the Work, including the necessary plugs and stoppers and the sealing of the joints.	EA	UP
32 94 43	Tree Grates: This item shall consist of the furnishing, placing and painting of tree grates at tree pits in accordance with the details and at the locations shown on the Plans.		
	Tree Grates will be measured on a "per each" basis for each grate satisfactorily placed at locations designated on the Plans.	EA	UP
	This item will be paid for at the Contract Unit Price per each for 'tree grates', which price will be full payment for furnishing and installing of galvanized angles, anchor straps, tree grates and all hauling, all placing of materials, all painting, including touch-up and repairing of both the primer paint and final paint and all labor, equipment, tools and incidentals necessary to complete this item.	EA	UP
33 00 02	Corrosion Control: Installation of corrosion control components shall be in accordance with the Specifications, and Drawings. All installation practices and components shall be approved by the Engineer.		
	The payment stated in the Bid price will be full compensation for all activities, materials, testing, etc., and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.	No	LS
33 05 16.13	Precast Concrete Utility Structures: Precast concrete utility structures shall include, but not necessarily be limited to, furnishing and installing precast concrete storm drain structures, manholes, valve and meter vaults, grade rings, and other miscellaneous structures of the configuration and to the extent indicated and in accordance with the Contract Documents.		
	The precast concrete utility structures for storm drain and sanitary sewer structures, manholes, valve and meter vaults, and other miscellaneous structures will be measured and paid for at the Contract Unit Price as indicated for the applicable utility Section	As specified	UP

33 11 13	Public Water Utility Distribution Piping: This Section includes requirements, but shall not necessarily be limited to, furnishing and installing water pipes, fittings, appurtenances, test, and chlorinate water pipes for a water supply and distribution system including fire protection to the limits indicated in accordance with the Contract Documents.		
	Unless otherwise specified in the Special Provisions payment for water mains will be made at the unit price Bid per linear foot in the proposal for various types and sizes of pipes; which prices shall include all material; labor; tools; equipment; hauling; excavating to planned trench subgrade; excavation for bell holes; sheeting and/or shoring; sills and wedges; pumping; stone or gravel cradle; backfilling with suitable material from the Project; rehandling of material; removal and disposal of unsuitable material; compacting; all fittings, stoppers, sleeves, closure pieces, gaskets, and jointing; buttresses; valve vaults; pitometer corporations; coatings; connections to existing lines; chlorinating; testing; maintaining service; and all incidentals necessary to complete these items of Work. Excavation of bell holes, when required, will not be paid for as such, but the cost thereof shall be included in and covered by the unit prices Bid for furnishing and laying pipe.	LF	UP
	Unit of measure for Extra Fittings will be the pound, as determined from the nominal tabulated weight of each fitting per ANSI/AWWA C153 (the weight of the fitting before the application of any lining or coating other than standard coatings). Weight of retainer glands, bolts, nuts and gaskets will not be measured. The weight of any fitting shall not be less than the nominal tabulated weight by more than ten percent (10%). No separate measure will be made for Extra Fittings.	LB	UP
	Whenever a pipe requires cutting, this Work shall be done as directed by the Engineer and the cost shall be included in the unit prices Bid for furnishing and laying the various size pipes.	No	Incidental
	Payment for fire hydrants, water service connections, and valves will be made as specified under Section 33 12 16, (Water valve and appurtenances), Section 33 12 00, (Water services, Water Meter Settings, and Vaults) and Section 33 12 19, (Water Utility Distribution Fire Hydrants).	As specified	As Specified
	Payment for pavement, sidewalk and curbing restoration shall be as specified under Section 32 01 30.10, (Patch Existing Pavement and Reset Utility Services).	CY	UP
	Excavation required below the planned elevation will be measured and paid for as specified in 31 23 33, (Trenching and Backfilling) when first approved by the Engineer.	CY	UP
	Selected backfill will be measured and paid for as specified in 31 23 33, (Trenching and Backfilling).	Ton	UP
	Encasement concrete and concrete or brick masonry to plug existing pipes will be measured and paid for at the Contract Price for the pertinent Concrete Mix No. 2 for Miscellaneous Structures or Brick Masonry for Miscellaneous Structures item.	Per Mix	UP
	Removal of Existing Pipe not in the same trench as the proposed pipe installation feet removed, regardless of the condition. When a multiple pipe installation is removed, each pipe will be measured and paid for.	LF	UP
	Pipe in tunnels and sleeves will be measured by the linear foot measured horizontally along the centerline of the pipe from inside face to inside face of access shafts. Payment will be made for the quantities measured at the unit price per linear foot listed in the Bid Schedule. Payment includes installation of City furnished pipe or pipe provided by the Contractor as the case may be, concrete invert between tunnel liner or sleeve and pipe, and all incidentals required to install the pipe in the tunnel liner or sleeve complete as shown on the Contract Plans.	LF	UP
	Casing pipe installed in open cut will be measured for payment by the linear foot measured horizontally along the centerline of the pipe from bulkhead to bulkhead. Payment includes excavation, backfill and bedding, provision of pipe, bulkheads and incidental appurtenances.	LF	UP

33 12 00	Water Service. Water Meter Setting and Vaults: Water services, water meter setting, and vault installation shall include, but not necessarily be limited to, furnishing and placing water services with appurtenant meter housings and connection to the water main in accordance with the Baltimore City Standard Details and/or the Contract Documents.		
	No measurement or payment will be made for the Work necessary to adjust and reconnect existing water service connection to the replacement water main. All costs associated with completing the reconnection including but not limited to excavation, disconnecting from and closing the existing tap, adjusting service piping and providing a new corporation stop in the new main, backfilling, compaction and any other Work needed to complete the reconnection is considered incidental to the replacement water main construction. All costs shall be included in the appropriate Bid items.	No	LS
	Any extension of the existing water service connections to the replacement water main shall be made at the Contract Unit Price per linear foot of pipe installed complete, including excavation, backfill and compaction, connections at corporation stop, at water meter, and at connection and reducer as needed to connect to existing service pipe at the full or partial replacement limit, and all labor, materials, tools, equipment and incidentals needed to complete Work specified herein. Payment will be based on pipe in place, whether the pipe is installed by open cut or by approved trenchless techniques. All costs associated with all labor, materials, tools, equipment and incidentals needed to complete Work specified is considered incidental to the Contract and shall be included in the unit price for service connections as contained in the Proposal.	LF	UP
	Payment for Water Service Pipe shall be made at the Contract Unit Price per linear foot of pipe installed complete, including excavation, allowance of two (2) linear feet for piping in the meter box (meter yoke, shunt, couplings and riser pipe when needed), backfill and compaction including backfill for meter pits , replacing service piping, tap and install new corporation stop, close the existing corporation stop and sever the connection, connections at corporation stop, at water meter, and at connection and reducer as needed to connect to existing service pipe at the full or partial replacement limit, and all labor, materials, tools, equipment and incidentals needed to complete Work specified herein. Payment will be based on pipe in place, whether the pipe is installed by open cut or by approved trenchless techniques. No measurement or payment will be made for the Work necessary to furnish and install water meter boxes and reinstall frames and covers.	LF	UP
	Relocation of existing water supply services shall be made at the Contract Unit Price per linear foot of pipe installed complete, including excavation, allowance of two (2) linear feet for piping in the meter box (meter yoke, shunt, couplings and riser pipe when needed), backfill and compaction including backfill for meter pits , replacing service piping, tap and install new corporation stop, close the existing corporation stop and sever the connection, connections at corporation stop, at water meter, and at connection and reducer as needed to connect to existing service pipe at the full or partial replacement limit, and all labor, materials, tools, equipment and incidentals needed to complete Work specified herein. Payment will be based on pipe in place, whether the pipe is installed by open cut or by approved trenchless techniques. No measurement or payment will be made for the Work necessary to furnish and install water meter boxes and reinstall frames and covers.	LF	UP
	All costs associated with furnishing and placing meter pit foundation gravel, furnishing and installing water meter boxes, reinstalling frames and covers, coordination with the City for the reinstallation of meters, and all labor, materials, tools, equipment and incidentals needed to complete Work specified is considered incidental to the Contract and shall be included in the unit price for service connections as contained in the Proposal.	No	Incidental
	All applicable excavation, sheeting, shoring, dewatering, hauling, invert paving, storing, rehandling of material, removal and disposal of excess and unsuitable material (above the planned subgrade), tamped fill, forming bed or foundation, stone, gravel cradle, backfill, compaction shall be measured and paid for as specified in 31 23 33 (Trenching and Backfilling, Point Excavation and Backfill).	As specified	As Specified

33 12 16	Water Valves and Appurtenances: Water valve and appurtenance installation shall include, but not necessarily be limited to, furnishing and installing resilient wedge gate, butterfly, and air release and vacuum valves or assemblies with appurtenant valve vaults or roadway valve boxes and accessories in accordance with the Contract Documents.		
	Gate/butterfly valve, air/vacuum release valve, tapping sleeve/valve and manhole/ vault will be measure per each at the Contract Unit Price. Price and payment will include flanged and mechanical joint ends, flanged and plain end pieces where needed along with sleeve couplings, tapping machine connection, saddle, excavation and backfill beyond trench excavation pay limits, concrete base, riser sections, castings and all labor, materials, tools, equipment and incidentals needed to complete Work specified.	EA	UP
33 12 19	Water Utility Distribution Fire Hydrants: Work consists of furnishing and setting fire hydrants, (boot with ductile iron retainer gland, standpipe and hydrant complete) plus constructing dry wells complete, at locations indicated in the Contract documents or as directed. Work includes restoration of landscape features and sodding. Trench excavation and backfill for hydrant connecting pipe, restraint, water valve and water valve casing are not part of Work.		
	Unit of measure will be each. Payment for Fire Hydrants will be made at the Contract Unit Price per each, which price and payment will include property restoration and sodding, seeding and mulching and all labor, materials, tools, equipment and incidentals needed to excavate, backfill, removal and disposal of unsuitable material, blocking, gravel well, copper pipe or tubing needed to complete Work specified.	EA	UP
	The installation of a hydrant connection pipe, a gate valve and a water valve casing will be paid under other pay items. (See 33 13 00, 33 11 13 and 33 12 16).	As specified	As Specified
	Pavement restoration shall be measured and paid for in accordance with 32 01 30.10 (Patch Existing Pavement and Reset Utility Services).	As specified	As Specified
33 13 00	Cleaning and Lining Water Mains: The Work to be done under the cleaning and lining portion of the Contract shall consist of furnishing all labor, materials, and equipment for the cleaning and cement mortar lining of existing water mains of various sizes and the temporary bypass associated with the Work as indicated in accordance with the Contract Documents. Payment shall include in full for installing in line valves, removing and installing all fire hydrant valves and removing and installing all fire hydrants, in-line, on mains to be cleaned and lined, checking for "open " position of all valves installed, all existing tees on mains below sixteen inch (16"), restrained joints, ductile iron pipe and fittings for fire hydrant leads, furnishing, installing and maintaining temporary bypass piping, below ground feeds, modified service connections, service valves, ductile iron pipe for service reconnections done as a modified service connection, furnishing and installing sheeting and shoring, all labor, tools, materials (including D.I.P. and fittings), notifications, equipment, excavation, backfilling, temporary and permanent paving restorations, pumping, testing and any incidentals (which includes in line and service fitting and valve removals) necessary to complete the cleaning and lining Work.		
	The cleaning and lining shall be measured for payment by the linear foot of main actually cleaned and lined, measured horizontally along the centerline of pipe with no deductions made for fittings or valves. Payment will be made at the unit price per linear foot for each size of pipe cleaned and lined as listed in the Schedule of Prices which meets the guaranteed Hazen-Williams "C" Factor test requirements.	LF	UP

33 31 00	Sanitary Utility Sewerage Piping: Sanitary sewer and sanitary house connection installation shall include, but not necessarily be limited to furnishing and installing gravity pipe, fittings, and appurtenances of the size and type shown on the Plans, installed on firm foundation true to line and grade and in accordance with the Contract Documents.		
	Pipe: Unless otherwise specified in the Special Provisions, measurement of sanitary sewers for payment will be on a linear foot basis and the quantity to be paid for will be the number of linear feet of pipe actually installed and accepted by the Engineer, which measurement shall be along the center line of pipe from end to end of each completed pipe line including length of fittings. Measurement of distances for which payment will be made for pipe shall start at the points where the ends of the pipes enter manholes, brick 'Y's' and other structures and shall terminate at the points where the pipes end in such structures. The price shall include all material; labor; tools; equipment; hauling; excavating to planned trench subgrade; excavation for bell holes; sheeting and/or shoring; sills and wedges; pumping; stone or gravel cradle; backfilling with suitable material from the Project; rehandling of material; removal and disposal of unsuitable material; compacting; all fittings, stoppers, closure pieces, gaskets, and jointing; coatings; connections to existing lines; maintaining service; and all incidentals necessary to complete these items of Work.	LF	UP
	Payment for pipe also includes excavation, backfill and bedding, installation of the pipe, fittings, and connections to new and existing facilities, and various size drop connections at manholes.	No	Incidental
	Unless otherwise specified in the Special Provisions, pipe abandonments including excavation and backfill, providing concrete and all incidentals will not be measured but will be incidental to the other sewer items.	No	Incidental
	Paving, sidewalk, and curbing restoration shall be measured and paid for in accordance with 32 01 30.10 (Patch Existing Pavement and Reset Utility Services).	As specified	As Specified
	The cost of collar taps shall be included in and covered by the unit prices Bid for pipe drains for which they form a part.	No	Incidental
	Whenever a pipe requires cutting, this Work shall be done as directed by the Engineer and the cost shall be included in the unit prices Bid for furnishing and laying the various size pipes.	No	Incidental
	Furnishing and installing house connections will be measured for payment by the linear foot of pipe actually installed and accepted by the Engineer, of the various types and sizes placed, measured horizontally along the centerline of the pipe, No deductions will be made for lengths of fittings. Payment will be made for the quantities measured at the unit price per linear foot for each size listed in the Bid Schedule. Payment includes excavation, backfill and bedding, provisions of pipe, fittings, connections to new and existing facilities, installation of saddles, and wye "Y" connections.	LF	UP
	Providing cleanouts will be measured for payment by the each complete in place, including installation of the City furnished cover assembly for traffic areas. Payment will be made for the quantities measured at the unit price per each listed in the Bid Schedule. Payment includes excavation, backfill and bedding, provisions of pipe, fittings, appropriate size Y branch and appurtenances.	ea	UP
	Pipe in tunnels and sleeves will measured out for payment by the linear foot measured horizontally along the centerline of the pipe from inside face to inside face of access shaft. Payment will be made for the quantities measured at the unit price per linear foot for each size listed in the Bid Schedule. Payment includes installation of pipe, provisions if concrete or grout fill for annular space between tunnel liner or sleeve and pipe or of pipe bedding and anchors as the case may be, and all incidentals required to install the pipe in the tunnel liner of sleeve complete as shown on the Drawings.	LF	UP
Cont'd	Cradles of concrete and/or reinforced concrete shall be built under pipe when indicated on the Drawings and as shown on the Standard Details. Such cradles will be paid for by the cubic yard at the unit price Bid for the class of concrete shown on the Plans, or otherwise directed to be used, including reinforcing bars when required. The right for the Engineer to vary the size of the section shown is reserved, and payment will be made only for the concrete and reinforcing steel of the section actually directed to be used.	CY	UP

33 31 00 cont'd	Where sewers are to be encased in concrete, such concrete will be paid for by the cubic yard for the actual section shown on the Standard Details, at the unit prices Bid per cubic yard for the various classes of concrete used including supporting sills and wedges. The right is reserved to reduce the size of the section of the concrete and when such reduction is made, only the actual section of concrete directed to be used will be paid for.	CY	UP
33 31 13.01	Cured in Place Pipe (CIPP) for Sanitary Sewers: A. This item shall consist of providing all labor, equipment, materials and supplies for all Work necessary to restore existing sanitary sewers to a state equivalent to the structural and hydraulic capacities of a new pipe installation. The Work includes but is not limited to the following: Providing design calculations relative to the installation of CIPP, bypass pumping of flow, cleaning the sanitary sewer, pre-rehabilitation inspection and video recording of the sanitary sewer, rehabilitation of the sanitary sewer system using CIPP lining including sealing liner at manhole, post-rehabilitation television inspection and video recording of the completed pipe section, proper removal and disposal of all waste, debris, excavated and demolished materials and pre and post televised inspections as directed.		
	CIPP will be measured and paid for at the Contract Unit Price per linear foot and the quantity to be paid for will be the number of linear feet of liner actually installed and accepted by the Engineer. Measurement shall be along the centerline of pipe from end to end at the inside face of wall at the manholes. The payment shall be full compensation for all material, labor, equipment, tools, hauling, bypass pumping, cleaning, and root removal.	LF	UP
	Reestablishing sewer house connections will be measured and paid for at the Contract Unit Price Bid per each for each sewer house connection reestablished; which payment will be full compensation for all labor, material, equipment, tools, sealing laterals where necessary and incidentals necessary to complete the Work.	EA	UP
33 31 13.02	Reestablish Sewer House Connections After Rehabilitating Main Line Sewer Cured in Place Pipe (CIPP): This Work shall consist of reestablishing sewer house connections after rehabilitating main line sewer with CIPP.		
	Reestablishing sewer house connections will be measured and paid for at the Contract Unit Price Bid per each for each sewer house connection reestablished; which payment will be full compensation for all labor, material, equipment, tools, sealing laterals where necessary and incidentals necessary to complete the Work.	EA	UP
33 39 13	Sanitary Utility sewerage Manholes, Miscellaneous Structures, Frames and Covers: Work consists of excavation, backfill and compaction beyond trench pay limits, furnishing and placing manholes complete, either over existing or new sewers, including concrete base and manhole frames and covers. Manhole risers shall be constructed of precast concrete elements or brick masonry built to the shapes and dimensions shown and in accordance with the Contract Documents and Standard Details. Payment will be full compensation for all excavation, concrete, masonry, special or precast units, reinforcement, ladder rungs, drip stones, No. 57 aggregate, underdrain stubs, frames, covers, grade and slope adjustments, backfill and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.		
	Standard manholes specified in the Contract Documents will be measured and paid for at the Contract Unit Price per linear foot of vertical depth for each type of unit built to the dimensions shown on the Standard Details, plus any additional vertical depth directed by the Engineer. The base bottom thickness for each unit shall not be included in the measurement. Furnishing and placing pipe stub connections in manholes, and masonry structures shall be incidental to the structure or invert/channel replacement Bid items.	LF	UP
	The measurement of length of brick curves will be measured on the basis of linear foot of the centerline length of the curve from P.C. to P.T. Payment will be made on the basis of unit price Bid per linear foot, which price shall include cost of collars required to connect curves to adjoining pipes and/or structures.	LF	UP
Cont'd	Miscellaneous structures constructed using brick masonry or concrete will be measured and paid for at the Contract Unit Price per cubic yard unless otherwise specified in the Contract Documents. No separate or additional measurement will be made for any precast concrete units, metal or castings used in the construction of any of the items noted above.	CY	UP

33 39 13 cont'd	When an existing sanitary sewer structure is to be removed and replaced with a new sanitary sewer structure in the same location, the cost to remove the existing sanitary sewer structure and a section of the existing pipe will be incidental to the cost of the new sanitary sewer structure.	No	Incidental
	Payment for Replace Manhole Invert/channel will be made at the Contract Unit Price per each, which price and payment will include removal of existing invert/channel, reshaping new invert/channel, disposal of unusable materials, and all labor, materials, tools, equipment and incidentals needed to complete Work specified.	EA	UP
33 41 00	Storm Utility Drainage Piping: Storm utility drainage piping shall include, but not necessarily be limited to, furnishing and installing concrete pipes, metal pipes, structural plate pipes and structural plate pipe arch culverts that are composed of curved plates bolted together in the field as specified in the Contract Documents or as directed by the Engineer. This Work shall consist of placing the size and type of concrete pipes, metal pipes, structural plate pipes and structural plate pipe arch culverts on a firm bed to the specified line and grade; including all pipe connections to existing pipes, inlets, end walls, or manholes; and cleaning the existing pipes as specified in the Contract Documents or as directed by the Engineer. The payment for the items specified in the Contract Documents will be full compensation for all applicable excavation, sheeting, shoring, dewatering, hauling, invert paving, storing, rehandling of material, removal and disposal of excess and unsuitable material, tamped fill, forming bed or foundation, backfill, compaction and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.		
	New pipe culverts will be measured complete in place and paid for at the Contract Unit Price per linear foot. When a new pipe is to be installed at the same location as an existing pipe, the cost of removal and disposal of the existing pipe, including end walls and end sections, will not be measured but the cost will be incidental to the Contract Price of new pipe.	LF	UP
	Pipe Connections and Elbows will be measured and paid for at the Contract Unit Price per each. No deduction from the pipe measurement will be made for pipe connections. Connections to drainage structures containing prefabricated holes in which the pipe will be connected with grout or mortar will not be measured, but the cost will be incidental to the pertinent Pipe item.	EA	UP
	Excavation required below the planned elevation will be measured and paid for as specified in 31 23 33 (Trenching and Backfilling).	As specified	As Specified
	Removal of Existing Pipe will be measured and paid for per the total number of linear feet removed, regardless of the condition. When a multiple pipe installation is removed, each pipe will be measured and paid for at the Contract Unit Price.	LF	UP
	End walls, end sections, etc. removed with the pipe will not be measured but the cost will be incidental to the Contract Price.	No	Incidental
	Selected backfill will be measured and paid for as specified in 31 23 33 (Trenching and Backfilling).	As specified	As Specified
	Re-laid Existing Pipe Culverts: Any Size will be measured complete in place and paid for at the Contract Unit Price per linear foot unless otherwise specified in the Contract Documents.	LF	UP
	New end walls, end sections, etc., will be measured and paid for as specified in 33 44 00 (Storm Utility Water Drains).	As specified	As Specified
	Removal of existing headwalls, end sections, etc., that are not incidental to the Contract Price for the respective pipe items will be measured and paid for as specified in 02 41 13.14 (Minor Select Site Demolition).	As specified	As Specified
	Encasement concrete and concrete or brick masonry to plug existing pipes will be measured and paid for at the Contract Price for the pertinent Concrete Mix No. 2 for Miscellaneous Structures or Brick Masonry for Miscellaneous Structures item.	CY	UP
	Clean Existing Pipe Any Size will be measured and paid for at the Contract Unit Price per linear foot.	LF	UP
	Structural Plate Pipe and Structural Plate Pipe Arch Culverts will be measured and paid for at the Contract Unit Price per linear foot. Measurement will be as follows: measure the top length and the bottom length and average. The average length will be the pay length for each pipe in the structure. For multiple pipes, the length will be totaled to obtain the total pay length.	LF	UP

33 44 13.23	Prefabricated Edge Drains: This Work shall consist of constructing a prefabricated edge drain system and underdrain pipe outlets as specified In the Contract Documents. Payment will be full compensation for excavation, backfill, compaction, and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.		
	Prefabricated Edge Drains and Outlet Pipe will be measured and paid for at the Contract Unit Price per linear foot.	LF	UP
	Additional backfill material authorized by the Engineer will be measured and paid for at the Contract Unit Price per cubic yard for Select Borrow Excavation.	CY	UP
33 44 19.12	Bioretention Facilities: Bioretention Facilities are small landscaped basins intended to provide water quality management by filtering storm water runoff before release into storm drain systems and waterways. This Work shall consist of installing Bioretention Facilities as specified in the Contract Documents or as directed by the Engineer, including all materials, equipment, labor and incidentals required to perform the Work. Any sediment laden water discharged from the perforated pipe system shall be filtered or removed from the outlet structure and is incidental to complete the Work.		
	Bioretention facilities will be measured and paid for at the Contract Unit Price per cubic yard. The payment will be full compensation for all applicable excavation, sheeting, shoring, dewatering, rototilling, loading, hauling, storing, rehandling of material, removal and disposal of excess and unsuitable material, PVC pipe, aggregate, geotextile, furnishing, mixing, pH correction, potassium correction, magnesium correction, placement of the BSM backfill, compaction of the BSM backfill by saturation, grading and slope adjustments, water for BSM saturation, mulch, sand, planting soil, all material, labor, equipment, tools, and incidentals necessary satisfactorily complete the Work.	CY	UP
	Discharge from Perforated Pipe System. Any sediment laden water discharged from the perforated pipe system shall be filtered or removed from the outlet structure and is incidental to complete the Work.	No	Incidental
	Plant materials placed in Bioretention Facilities shall be measured and paid for at the Contract Unit Price per each item specified in the Contract Documents.	EA	UP
33 44 19.14	Dry Swale Facilities: Dry Swale Facilities are linear, trapezoidal vegetated swales intended to provide water quality management by filtering storm water runoff before release into storm drain systems and waterways. This Work shall consist of installing Dry Swale Facilities as specified in the Contract Documents or as directed by the Engineer, including all materials, equipment, labor and incidentals required to perform the Work. Payment for the items specified in the Contract Documents will be full compensation for all applicable excavation, sheeting, shoring, dewatering, rototilling, loading, hauling, storing, rehandling of material, removal and disposal of excess and unsuitable material, PPWP, aggregate, geotextile, furnishing, mixing and placement of the BSM backfill, compaction of the BSM backfill by saturation, grading and slope adjustments, water for BSM saturation, mulch, sand, planting soil, sodding, and for all material, labor, equipment, tools, and incidentals necessary satisfactorily complete the Work.		
	Any sediment laden water discharged from the perforated pipe system during compaction of the BSM during saturation shall be filtered or removed from the outlet structure and is incidental to completing the Work.	No	Incidental
	Excavation for Dry Swale Facilities will be measured and paid for at the Contract Unit Price per cubic yard for the pertinent Class of Excavation.	CY	UP
	Dewatering and rototilling of the excavated areas for Dry Swale Facilities will not be measured but will be incidental to excavation.	No	Incidental
	Geotextile for Dry Swale Facilities will be measured and paid for at the Contract Unit Price per square yard for Geotextile Class PE, Type III.	SY	UP
	Aggregate for Dry Swale Facilities will be measured and paid for at the Contract Unit Price per ton for the pertinent Stone Aggregate item.	Ton	UP
Cont'd			

APPENDIX D

BID ITEMS

33 44 19.14 cont'd	ASTM C33 Fine Aggregate (Sand) for Dry Swale Facilities shall be measured and paid for at the Contract Unit Price per cubic yard for ASTM C33 Fine Aggregate.	CY	UP
	PPWP for Dry Swale Facilities will be measured and paid for at the Contract Unit Price per linear foot for Polyvinyl Chloride Profile Wall Pipe (PPWP). Fittings, manufactured connections and geotextile sleeves will not be measured but will be incidental to the Contract Price.	LF	UP
	Planting Soil for Dry Swale Facilities will be measured and paid for at the Contract Unit Price per cubic yard for planting soil for Dry Swale Facilities.	CY	UP
	BSM. Furnishing, amendments, mixing, mixing of corrective additives, placement, compaction, and grading of BSM will not be measured but will be incidental to the Contract Price of planting soil, fine aggregate, and mulch.	No	Incidental
	Mulch will be measured and paid for at the Contract Unit Price per square yard.	SY	UP
	Watering for compaction of the BSM in Dry Swale Facilities will be measured and paid for at the Contract Unit Price per 1000 gallons of water applied to the BSM.	1000 Gal	UP
	Sod for Dry Swale Facilities will be measured and paid for at the Contract Unit Price per square yard.	SY	UP
33 44 19.15	Drainage, Surface sand Filters: Surface Sand Filters are infiltration systems intended to provide water quality management by filtering storm water runoff before release into storm drain systems and waterways. This Work shall consist of installing Surface Sand Filters as specified in the Contract Documents or as directed by the Engineer, including all materials, equipment, labor and incidentals required to perform the Work. Payment for the items specified in the Contract Documents will be full compensation for all applicable excavation, sheeting, shoring, dewatering, rototilling, loading, hauling, storing, rehandling of material, removal and disposal of excess and unsuitable material, PPWP, aggregate, geotextile, furnishing, mixing and placement of the BSM backfill, compaction of the BSM backfill by saturation, grading and slope adjustments, water for BSM saturation, mulch, sand, planting soil, sodding and for all material, labor, equipment, tools and incidentals necessary satisfactorily complete the Work. Discharge from Perforated Pipe System.		
	Any sediment laden water discharged from the perforated pipe system during compaction of the sand and BSM during saturation shall be filtered or removed from the outlet structure and is incidental to completing the Work.	No	Incidental
	Excavation for Surface Sand Filters will be measured and paid for at the Contract Unit Price per cubic yard for the pertinent Class of Excavation.	CY	UP
	Dewatering and rototilling of the excavated areas for Surface Sand Filters will not be measured but will be incidental to excavation.	No	Incidental
	Geotextile for Surface Sand Filters will be measured and paid for at the Contract Unit Price per square yard for Geotextile Class PE, Type III.	SY	UP
	Aggregate for Surface Sand Filters will be measured and paid for at the Contract Unit Price per ton for the pertinent Stone Aggregate item.	Ton	UP
	ASTM C33 Fine Aggregate (Sand) for Surface Sand Filters shall be measured and paid for at the Contract Unit Price per cubic yard for ASTM C33 Fine Aggregate.	CY	UP
	PPWP for Surface Sand Filters will be measured and paid for at the Contract Unit Price per linear foot for Polyvinyl Chloride Profile Wall Pipe (PPWP). Fittings, manufactured connections and geotextile sleeves will not be measured but will be incidental to the Contract Price.	LF	UP
	Planting soil for Surface Sand Filters will be measured and paid for at the Contract Unit Price per cubic yard for planting soil for Surface Sand Filters.	CY	UP
	BSM. Furnishing, amendments, mixing, mixing of corrective additives, placement, compaction and grading of BSM will not be measured but will be incidental to the Contract Price of planting soil, fine aggregate and mulch.	No	Incidental
Cont'd			

33 14 19.15 cont'd	Mulch will be measured and paid for at the Contract Unit Price per square yard.	SY	UP
	Watering for compaction of Sand and BSM in Surface Sand Filters will be measured and paid for at the Contract Unit Price per one thousand (1000) gallons of water applied to Sand and BSM.	Per 1000 Gal	UP
	Sod for Surface Sand Filters will be measured and paid for at the Contract Unit Price per square yard.	SY	UP
33 44 19.16	Infiltration Trenches: This Work shall consist of installing infiltration trenches as specified in the Contract Documents or as directed by the Engineer.		
	Infiltration Trenches will be measured and paid for at the Contract Unit Price per cubic yard. The payment will be full compensation for all excavation, stone, capping, riprap, geotextile, PVC pipe, fittings, cap, and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.	CY	UP
33 46 16.19	Pipe Underdrains and Outlets: This Work shall consist of constructing underdrains, subgrade drains, underdrain for spring control, underdrain pipe outlets, and blind drains using pipe, geotextile, and granular material as specified in the Contract Documents or as directed by the Engineer. Cleaning existing underdrain outlets is also included in this Work. Payment will be full compensation for all excavation, pipe, coupling bands, aggregate, backfill, geotextile, video inspection and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.		
	Underdrains, underdrain pipe outlets, subgrade drains, and underdrain pipe for spring control will be measured and paid for at the Contract Unit Price per linear foot.	LF	UP
	Slope headwalls, rodent screens, and marker posts will not be measured but will be incidental to the cost of the underdrain outlet.	No	Incidental
	When an underdrain pipe is not used for spring control, all excavation and backfill for spring control will be measured and paid for at the Contract Unit Price per cubic yard for Class 3 excavation for incidental construction and aggregate backfill for underdrain.	CY	UP
	When directed by the Engineer, excavation for underdrains, subgrade drains, and underdrain for spring control required to lower the trench to an elevation deeper than specified in the Contract Documents will be measured and paid for at the Contract Unit Price per cubic yard for Class 3 excavation for incidental construction and aggregate backfill for underdrain.	CY	UP
	When measuring the length of a manufactured connection (tee, elbows, etc.) other than coupling bands, each actual linear foot will be doubled and payment made at the Contract Unit Price per linear foot for the appropriate underdrain pipe item specified in the Contract Documents.	LF	UP
	Cleaning existing underdrain outlets will be measured and paid for at the Contract Unit Price per each. The payment will be full compensation for locating outlets, removing and replacing the existing rodent screens, removal and disposal of material removed from the pipe, and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.	EA	UP

33 49 00	Storm Drainage Structures: This Work shall consist of constructing miscellaneous cast in place concrete or masonry structures, and installing precast concrete structures as specified in the Contract Documents or as directed by the Engineer. Payment will be full compensation for all excavation, concrete, masonry, special or precast units, reinforcement, ladder rungs, drip stones, No. 57 aggregate, underdrain stubs, frames, grates and covers, grade and slope adjustments, backfill and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.		
	Standard inlets and manholes specified in the Contract Documents will be measured and paid for at the Contract Unit Price per linear foot of vertical depth for each type of unit built to the dimensions shown on the Standard plates, plus any additional vertical depth directed by the Engineer. The base bottom thickness for each unit shall not be included in the measurement.	LF	UP
	The measurement of length of brick curves will be measured on the basis of linear foot of the centerline length of the curve from P.C. to P.T. Payment will be made on the basis of unit price Bid per linear foot, which price shall include cost of collars required to connect curves to adjoining pipes and/or structures.	LF	UP
	Standard end walls, headwalls, end sections and special structures will be measured and paid for at the Contract Unit Price per each.	EA	UP
	Nonstandard end walls and other miscellaneous structures such as steps, spring boxes, and junction boxes, constructed using brick masonry or concrete will be measured and paid for at the Contract Unit Price per cubic yard unless otherwise specified in the Contract Documents.	CY	UP
	No separate or additional measurement will be made for any precast concrete units, metal or castings used in the construction of any of the items noted above.	No	Incidental
	When an existing drainage structure is to be removed and replaced with a new drainage structure in the same location, the cost to remove the existing drainage structure and a section of the existing pipe will be incidental to the cost of the new drainage structure.	No	Incidental
34 01 13.10	Traffic Control Plan (TCP): A. This Work shall consist of the development and implementation of a TCP. The TCP will include the design and placement of items such as signing, pavement markings, delineation, channelization, barriers, crash cushions and other items as required.		
	Any traffic control plan developed by the Contractor will not be measured but the cost will be incidental to other pertinent items specified in the Contract Documents.	No	Incidental
34 01 13.15	Saw Cuts for Traffic Control Devices: This Work shall consist of saw cutting and sealing the saw cuts for traffic control devices, within and alongside the roadway, between the detector location and the nearest terminal point as specified in the Contract Documents or as directed by the Engineer.		
	Saw Cuts for traffic control devices will be measured and paid for at the Contract Unit Price per linear foot. The payment will be full compensation for all drilled holes, washing, cleaning, drying, sealing and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.	LF	UP
34 01 13.20	Flagger: This Work shall consist of furnishing flaggers when specified in the Contract Documents or as directed by the Engineer. Flagging shall conform to MUTCD. All outfits and equipment (Stop/Slow paddles, pilot cars or other vehicles, air horns or bull horns, field telephones, two-way radios, site illumination, etc.) will be subject to the approval of the Engineer. Flaggers shall have completed a City approved flagger training course within the last three (3) years. The failure of any flagger to perform the required duties shall be grounds for the Engineer to require a replacement.		
	Flagger will not be measured but the cost will be incidental to the Contract Price for maintenance of traffic unless otherwise specified in the Contract Documents.	No	Incidental
	When an item for flagger is specified in the Contract Documents, the flagger will be measured and paid for at the Contract Unit Price per hour unless otherwise specified in the Contract Documents. The payment will be full compensation for clothing and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.	Hour	UP

34 01 13.30	Traffic Manager (TM): This Work shall consist of furnishing a traffic manager (TM) as specified in the Contract Documents.		
	The traffic manager will not be measured but the cost will be incidental to the Contract Price for maintenance of traffic.	No	Incidental
34 41 00	Roadway Signaling and Control Equipment (Maintenance of Traffic): This Work shall consist of maintaining vehicular and pedestrian traffic on or along any transportation facility as specified in the Contract Documents. This Section sets forth the traffic control requirements necessary for the safe and continuous maintenance of traffic throughout the area affected by the Work and is intended to minimize inconveniences to the traveling public, while providing for the safety of motorists, pedestrians and workers.		
	When specified in the Contract Documents, maintenance of traffic will be measured and paid for at the Contract Unit Price per unit day.	Per Day	UP
	When there is no item in the Contract Documents, maintenance of traffic will not be measured but the cost will be incidental to other pertinent items specified in the Contract Documents.		
	Unless otherwise specified, maintenance of traffic will not be measured but will be paid for at the Contract lump sum price. The payment will be full compensation for relocating, turning, completely covering and uncovering or removing and resetting, maintaining in like new condition and cleaning all existing and temporary traffic signs, and any other traffic control device. Also included are the inventory of all existing pavement markings and the treatment of any other traffic control device not included in these Specifications but necessary for the fulfillment of the Contract requirements and implementation of the approved traffic control plan and for all material, labor, equipment, tools, and incidentals necessary to complete the Work. Payment of the Contract lump sum price will be prorated and paid in equal amounts on each monthly estimate. The number of months used for prorating will be the number estimated to complete the Work.	No	LS
	When additional Contract pay items for maintenance of traffic are specified in the Contract Documents, measurement and payment will conform to the pertinent pay items included in the Contract Documents.	As specified	As Specified
	Cones, reflective collars, anchoring devices, stop/slow paddles, sign flags and warning lights will not be measured but the cost will be incidental to the Contract Price for maintenance of traffic unless otherwise specified in the Contract Documents.	No	Incidental
	Temporary traffic control devices, which in the Engineer's opinion need replacement, shall be replaced immediately by the Contractor. The cost to replace traffic control devices, including all material, labor, equipment and tools, will not be measured but will be incidental to the Contract Price for maintenance of traffic except when specifically set up in the Contract Documents as a separate Contract pay item.	No	LS
	Material, equipment and labor necessary for the Construction and removal of temporary or detour roads will be measured and paid for at the Contract Unit Price for the pertinent items used.	As specified	UP
34 41 13.10	Signal Structures: This Work shall consist of the pickup and the installation of City furnished signal structures of the sizes specified in the Contract Documents or as directed by the Engineer. The anchor bolts; grommets and miscellaneous hardware will be furnished by the City.		
	Installation of City furnished signal structures will be measured and paid for at the Contract Unit Price per each for the type of structure erected in place. The payment will be full compensation for the transportation and installation of all steel poles, mast arms, twin mast arms, triple mast arms, strain poles, pedestal poles, breakaway base support systems and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.	EA	UP
	Concrete foundations will be measured and paid for as specified in 10 14 15.02, Part 4, (Concrete Foundations for Traffic Structures). Payment will be full compensation for all concrete, excavation, corrugated metal pipe or forms, reinforcement steel, anchor bolts, backfill and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.	CY	UP

34 41 13.20	Steel Span Wire: This Work shall consist of furnishing and installing steel span wire for signal head or sign mountings, interconnect runs or for tethering purposes when specified in the Contract Documents or as directed by the Engineer. Steel Span Wire of the size specified in the Contract Documents will be measured and paid for at the Contract Unit Price per linear foot for the wire installed. The payment will be full compensation for all hardware, material, labor, equipment, tools, and incidentals necessary to complete the Work.		
		LF	UP
34 41 13.30	Signal Heads: This Work shall consist of furnishing and installing vehicle traffic control signal heads and pedestrian traffic control signal indications and mounting hardware as specified in the Contract Documents or as directed by the Engineer. Aluminum, Polycarbonate and Optically Programmed Signal Heads and Pedestrian Signal Indications furnished and installed will be measured and paid for at the Contract Unit Price per each section of signal head type and size as specified in the Contract Documents. The payment will be full compensation for all lenses, mounting hardware, assembly and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.		
		EA	UP
34 41 16.06	Trenching and Backfilling for Traffic Control Devices: This Work shall consist of excavating and backfilling trenches to the width required to receive underground conduit, wire or duct cable for traffic control devices as specified in the Contract Documents or as directed by the Engineer. Trenching and backfilling will not be measured but the cost will be incidental to the Contract Unit Price for the installation of the pertinent conduit, detector tape, wire, or duct cable.		
		No	Incidental
34 41 16.08	Traffic Control Device Cabinets and Equipment: This Work shall consist of installing City furnished traffic signal controllers and cabinets, furnishing and installing traffic signal controllers and cabinets, and furnishing and installing lighting control cabinets for highway and sign lighting as specified in the Contract Documents or as directed by the Engineer. Installing City furnished signal controllers and cabinets or furnishing and installing Contractor furnished traffic signal controllers and cabinets will be measured and paid for at the Contract Unit Price per each for the pertinent item. The payment will be full compensation for furnishing the controller or cabinet when specified, installation, and for all material, labor, equipment, tools, and incidentals necessary to complete the Work. Concrete foundations will be measured and paid for as specified in 10 14 15.02, (Concrete Foundations for Traffic Signals). Conduit will be measured and paid for as specified in 26 07 01.01, (Electrical Conduit and Fittings). Ground rods will be measured and paid for as specified in 26 44 00, (Grounding). Lighting Cabinets will be measured and paid for at the Contract Unit Price per each of the type and size as specified in the Contract Documents. The payment will be full compensation for all enclosures, panel boards, transformers, circuit breakers, contactors, relays, photoelectric controls, thermostats, fans, selector switches, ground fault interrupters, lightning arresters, conduit, internal wiring, wiring devices, and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.		
		EA	UP
		CY	UP
		As specified	As Specified
		Per each 10 FT	UP
		EA	UP
34 41 16.09	Push Buttons and Push Button Signs: This Work shall consist of furnishing and installing round pedestrian push button assembly with two inch (2") plunger and push button signs at locations specified in the Contract Documents, or as directed by the Engineer. Push buttons and push button signs will be measured and paid for at the Contract Unit Price per each. The payment will be full compensation for furnishing, installing, drilling of holes, mounting hardware, and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.		
		EA	UP

34 71 13.01	Temporary Traffic Carrier End Treatment: This Work shall consist of furnishing, erecting, maintaining, resetting and removal of temporary traffic barrier end treatments in conformance with the manufacturer's recommendations or as directed by the Engineer. The traffic barrier end treatments shall be located as specified in the Contract Documents or as directed by the Engineer.		
	Temporary traffic barrier End treatments will be measured and paid for at the Contract Unit Price per each for the type specified in the Contract Documents. The payment will be full compensation for all base pads, anchors, fastenings, fixtures, reflectorization, erection of materials, backup blocks, supports, galvanizing of metal parts, connections to bridges, structures or fixed objects and for all material, labor, equipment, tools, and incidentals necessary to provide a complete temporary traffic barrier end treatment.	EA	UP
	Temporary crash cushion sand filled plastic barrels will be measured and paid for as specified in to 34 71 13.17, Part 4, (Temporary Crash Cushion Sand filled Plastic Barriers (SFPB)).	As specified	As Specified
	Remove and reset temporary traffic barrier end treatments will be measured and paid for at the Contract Unit Price per each, for the type specified in the Contract Documents, removed, relocated and reset in a manner acceptable to the Engineer. The conditions specified for the initial installation and removal of the end treatment shall be applicable to removing and resetting the end treatment.	EA	UP
	Temporary traffic barrier end treatment spare parts package furnished and installed will be measured and paid for at the Contract Unit Price per each for the type specified in the Contract Documents. The payment will be full compensation for the complete furnishing and installation, complete clearing and removal of debris and damaged unsalvageable parts and for all material, labor, equipment, tools, and incidentals necessary to construct the temporary end treatment to the configuration specified in the traffic control plan or as directed by the Engineer.	EA	UP
	When spare parts packages are furnished by the City, repairing temporary traffic barrier end treatments will be measured and paid for at the Contract Unit Price per each for the type specified in the Contract Documents. The payment will be full compensation for all transportation, installation, reconnection to fixed objects where necessary, complete clearing and removal of debris and damaged unsalvageable parts and for all material, labor, equipment, tools, and incidentals necessary to construct the temporary end treatment to the configuration specified in the traffic control plan or as directed by the Engineer.	EA	UP
	Payment will not be made for spare parts packages used for end treatments damaged due to the Contractor's operations as determined by the Engineer.	No	No
	Removal of the temporary traffic barrier end treatments will not be measured but the cost will be incidental to the initial Contract Unit Price per each. Removal shall include patching of any holes made to anchor or stabilize the end treatment and cleaning and clearing the area of all debris.	No	Incidental
34 71 13.02	Drums for Maintenance of Traffic: This Work shall consist of furnishing and placing drums and maintaining in like new condition. The drums shall be located as specified in the Contract Documents or as directed by the Engineer.		
	Drums for maintenance of traffic will be measured and paid for once at the Contract Unit Price per each. The payment will include reflectorization, setting, resetting, removing, sandbags, maintenance, cleaning of drums to like new condition and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.	EA	UP
	Where drums have been set and are subsequently damaged by traffic and the Engineer determines that they are not repairable, they shall be replaced and will be measured and paid for at the Contract Unit Price.	EA	UP

34 17 13.03	Barricades for Maintenance of Traffic: This Work shall consist of furnishing and installing barricades for maintenance of traffic. Barricades shall be used as specified in the Contract Documents or as directed by the Engineer.		
	Barricades will be measured and paid for at the Contract Unit Price per each for the pertinent barricade item specified in the Contract Documents and accepted by the Engineer. The payment will be full compensation for the installation, maintenance, warning lights, (when required by the traffic control plan), the maintenance and removal of any required warning lights, removal of the barricades, and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.	EA	UP
	Where barricades have been set and are subsequently damaged by traffic and the Engineer determines that they are not repairable, they shall be replaced and will be measured and paid for at the Contract Unit Price.	EA	UP
34 71 13.04	Cones for Maintenance of Traffic: This Work shall consist of furnishing and installing new or like new cones in conformance with the Contract Documents.		
	Cones for maintenance of traffic and cones that have to be replaced will not be measured but the cost will be incidental to the Contract Price for maintenance of traffic.	No	Incidental
34 71 13.05	Permanent Traffic Barrier End Treatments: This Work shall consist of furnishing and installing permanent traffic barrier end treatments as specified in the Contract Documents or as directed by the Engineer. Payment will be full compensation for all excavation, fabrication of all component parts, transitions to barriers, reflectorization, backfill, restoration of grassed or paved areas, seed and mulch, soil stabilization matting and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.		
	Traffic Barrier End Treatments will be measured and paid for at the Contract Unit Price for the pertinent end treatments below.		
	Removal of the existing end treatment to be replaced will not be measured but the cost will be incidental to the Contract Unit Price for the respective end treatments.	No	Incidental
	Type A Traffic Barrier End Treatments (Single and Double Rail), Traffic Barrier W Beam per linear foot for the actual number of linear feet measured to centers of posts. When a double rail installation is required, each rail will be measured and paid for at the Contract Unit Price per linear foot for traffic barrier W beam.	LF	UP
	Type A Traffic Barrier End Treatments (Single and Double Rail), End Anchorage Terminals will be measured and paid for at the Contract Unit Price per each.	EA	UP
	Type B through J Traffic Barrier End Treatments per each.	EA	UP
	Surface adjustment for Types B, C, D, E, and F end treatments will be measured and paid for at the Contract Unit Price per cubic yard for the surface adjustment for traffic barrier end treatment item. The payment will be full compensation for furnishing, adjusting embankment or aggregate material, compaction and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.	CY	UP
	Permanent Crash Cushion Sand Filled Plastic Barrels will be measured and paid for at the Contract Unit Price per barrel. The payment will be full compensation for all Furnishing, placing, excavation, sand, antifreeze agent, machinery, labor, equipment, tools, and incidentals necessary to complete the Work.	Per barrel	UP
	Traffic Barrier End Treatment Spare Parts Package furnished and installed will be measured and paid for at the Contract Unit Price per each for the type specified in the Contract Documents. The payment will be full compensation for the complete furnishing and installation of the spare parts package, complete clearing and removal of debris and damaged unsalvageable parts and for all material, labor, equipment, tools, and incidentals necessary to construct the end treatment to the configuration specified in the Contract Documents or as directed by the Engineer.	EA	UP

Cont'd

34 71 13.05 cont'd	When spare parts packages are furnished by the City, repairing traffic barrier end treatments will be measured and paid for at the Contract Unit Price per each for the type specified in the Contract Documents. The payment will be full compensation for all transportation, installation, reconnection to fixed objects where necessary, complete clearing and removal of debris and damaged unsalvageable parts and for all material, labor, equipment, tools, and incidentals necessary to construct the end treatment to the configuration specified in the Contract Documents or as directed by the Engineer.	EA	UP
	Payment will not be made for spare parts packages used for end treatments damaged due to the Contractor's operations as determined by the Engineer.	No	No
	The application of fusion bonded brown polyester coating, as well as all special handling will not be measured but the cost will be incidental to the item to which the coating is applied.	No	Incidental
34 71 13.17	Temporary Crash Cushion Sand Filled Plastic Barrels (SFPB): This Work shall consist of furnishing and installing Sand Filled Plastic Barrels (SFPB). Sand Filled Plastic Barrels shall be arranged as specified in the traffic control plan or as directed by the Engineer. Payment will be full compensation for furnishing, excavation, placing, installing, cleaning, maintaining, sand, antifreeze agent, machinery, replacement, remove, reset, re-grading, and removing from the project the individual weighted barrels in a manner acceptable to the Engineer and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.		
	Temporary crash cushion sand filled plastic barrels for maintenance of traffic will be measured and paid for at the Contract Unit Price per barrel.	EA	UP
	Replacement of (SFPB) for maintenance of traffic will be measured and paid for at the Contract Unit Price per barrel.	EA	UP
	Remove and reset temporary crash cushion sand filled plastic barrels for maintenance of traffic will be measured and paid for at the Contract Unit Price per barrel.	EA	UP
34 71 13.20	Temporary Concrete Traffic Barriers (TCB) for Maintenance of Traffic: This Work shall consist of furnishing, placing, resetting, and removing temporary concrete traffic barriers for use at locations specified in the Contract Documents or as directed by the Engineer. Payment will be full compensation for furnishing, placing, maintaining and removal from the project site as directed by the Engineer and for all material, labor, equipment, tools and incidentals necessary to complete the Work.		
	Temporary concrete traffic barrier for maintenance of traffic and reset temporary concrete traffic barrier for maintenance of traffic will be measured and paid for at the Contract Unit Price per linear foot measured along the centerline of the top of the barrier. The payment to reset the temporary concrete traffic barrier for maintenance of traffic will also include removal from its original placement, transporting and resetting it in its new temporary location.	LF	UP
	Reflective barrier markers, vertical panels and warning lights will be measured and paid for at the Contract Unit Price per each.	EA	UP
34 71 13.21	Traffic Barrier W Beam (TBWB) for Maintenance of Traffic: This Work shall consist of furnishing, erecting, maintaining, resetting and removing temporary TBWB at locations specified in the traffic control plan or as directed by the Engineer. Payment will be full compensation for furnishing and installing all cables, posts, brackets, traffic barrier W beam, hardware, galvanizing, excavation, backfilling, connections to rigid structures, removal, restoration of the area and for all material, labor, equipment, tools, and incidentals necessary to complete the Work as directed by the Engineer.		
	Traffic Barrier W Beam for Maintenance of Traffic will be measured and paid for at the Contract Unit Price per linear foot.	LF	UP
	Replacing sections of the traffic barrier that have been damaged by vehicular traffic while in place will be measured and paid for at the Contract Unit Price per linear foot for the traffic barrier W beam replacement for maintenance of traffic item.	LF	UP
	Reset traffic barrier W beam for maintenance of traffic will be measured and paid for at the Contract Unit Price per linear foot.	LF	UP

34 71 13.22	Tubular Markers: This Work shall consist of furnishing, installing and removing tubular markers for maintenance of traffic as specified in the Contract Documents or as directed by the Engineer.		
	Tubular markers will be measured and paid for at the Contract Unit Price per each. The payment will be full compensation for the removal of and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.	EA	UP
	Tubular markers that are damaged as a result of traffic operations shall be replaced and will be measured and paid for at the Contract Unit Price per each for replacement of tubular marker mast.	EA	UP
	If the base detaches from the pavement, the entire tubular marker assembly shall be replaced by the Contractor at no additional cost to the City, unless damaged by City snow removal operation.	No	No
34 71 13.23	Temporary Movable Type Concrete Traffic Barrier (MCTB): This Work shall consist of furnishing, placing, assembling, maintaining, moving, removing and disposing of a movable interlocking type concrete traffic barrier where specified in the Contract Documents or as directed by the Engineer. Payment will be full compensation for all material, labor, equipment, tools and incidentals necessary to complete the Work.		
	The initial installation of the temporary movable type concrete traffic barrier will be measured and paid for at the Contract Unit Price per linear foot measured in place from end to end. The payment will also include furnishing, placing, maintenance, transfer device, all associated costs, replacing sections damaged during installation and removing the barrier from the project site.	LF	UP
	Transfer shifts of the barrier will be measured and paid for at the Contract Unit Price per linear foot for the transfer shift of movable type concrete barrier item. The measurement will be end to end for the barrier actually shifted. The Contract Unit Price will apply to each shift. The payment will also include the shift, the transfer device and associated costs.	LF	UP
	Replacing sections of the barrier, which have been damaged by vehicular traffic while in place, will be measured and paid for at the Contract Unit Price per each for the replacement sections for movable type concrete barrier item. At the direction of the Engineer, sections damaged by the Contractor's operations requiring replacement, shall be replaced at no additional cost to the City. The payment will be full compensation for all material, labor, equipment, tools, and incidentals necessary to complete the Work.	EA	UP
	Resetting the barrier will be measured and paid for at the Contract Unit Price per linear foot for the reset movable type concrete barrier item. The payment will also include removal from its original placement, transporting and resetting it in its new temporary location.	LF	UP
	Reflective barrier markers will be measured and paid for as specified in 34 71 13.20, paragraph 4.A.2.	EA	UP
	When end treatments are required, they will be measured and paid for under the pertinent item specified in the Contract Documents.	As specified	As Specified
34 71 13.24	Concrete Traffic Barriers: This Work shall consist of constructing concrete traffic barriers as specified in the Contract Documents or as directed by the Engineer. Payment will be full compensation for all concrete, test panels, excavation, removal of existing hot mix asphalt, disposal of excess or unsuitable material, concrete footer, forms, reinforcement, drilled holes, drainage appurtenances, geotextile, No. 57 aggregate, conduit, boxes and fittings, backfilling, and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.		
	The removal and disposal of unsuitable material will be measured and paid for at the Contract Unit Price for Class 2 Excavation, which price shall include the cost of using suitable excavation as replacement material. When borrow or selected backfill is authorized as replacement material, payment will be made at the Contract Unit Price for the respective items.	As specified	UP
	Removal of existing concrete traffic barriers will not be measured unless specified elsewhere in the Contract Documents.	No	Incidental
	Concrete traffic barriers will be measured and paid for at the Contract Unit Price per linear foot. Measurement will be along the centerline of the top of the barrier.	LF	UP
	Concrete traffic barrier end transitions will be measured and paid for at the Contract Unit Price per each.	EA	UP
	Reflective delineators will be measured and paid for at the Contract Unit Price per each.	EA	UP

34 71 13.25	Metal Traffic Barriers: This Work shall consist of constructing metal traffic barriers as specified in the Contract Documents or as directed by the Engineer. Payment will be full compensation for all rock excavation, components, restoration of grassed or paved areas, drilled post holes, concrete, assembly and erection of all component parts, and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.		
	Traffic barrier W beam will be measured and paid for at the Contract Unit Price per linear foot. The beam traffic barrier will be measured and paid for as specified in the Contract Documents.	LF	UP
	The application of fusion bonded brown polyester coating, as well as all special handling and touch up, will not be measured but the cost will be incidental to the item to which the coating is applied.	No	Incidental
	Replacing and installing additional posts, splice joints and W beam panels will be measured and paid for at the pertinent Contract Unit Price.	As specified	UP
	Removal and disposal of existing traffic barrier will be measured and paid for at the Contract Unit Price per linear foot.	LF	UP
	Remove and reset existing traffic barrier will be measured and paid for at the Contract Unit Price per linear foot. Wood offset blocks will not be measured, but the cost will be incidental to the item.	LF	UP
	Wood offset blocks will not be measured, but the cost will be incidental to the item.	No	Incidental
	Reflective delineators will be measured and paid for at the Contract Unit Price per each.	EA	UP
34 71 17	Truck Mounted Attenuator (TMA): A. This Work shall consist of furnishing Truck Mounted Attenuators as specified in the Contract Documents or as directed by the Engineer.		
	Truck mounted attenuator will be measured and paid for at the Contract Price per unit day. A unit day shall consist of any approved usage within a twenty four (24) hour Calendar Day period. If a truck mounted attenuator is used for part of a day, it will be measured as a unit day, regardless of how many times it is relocated. The payment will be full compensation for the complete truck mounted attenuator, licensed truck operator, connecting and disconnecting the attenuator to the truck, transporting and relocating the truck mounted attenuator, and for all material, labor, equipment, tools, and incidentals necessary to complete the Work.	Per Day	UP

35 20 23	Dredging: This item comprises subaqueous excavation by means of hydraulic or bucket dredging and includes the transporting and disposing of the dredged materials or its use in the project when so stated in the proposal. Also refer to 31 23 23.24, (Hydraulic Fill).		
	Dredging will be measured only when specifically noted in the Special Provisions. Unless otherwise noted, dredging will be measured in place, in its original position, within the prescribed pay limits as shown on the plans or described in the Special Provisions. Measurements will be made by means of cross sections and soundings taken before and after dredging is done and volumes will be computed by average end areas, from the cross sections of the original ground combined with prescribed pay limits of the completed Work.	As specified	As Specified
	If so noted in the Proposal, volumes of dredging material may be computed by means of scow measurements and the details of such method shall be as stated in the Proposal or as agreed upon by the Contractor and the Engineer before the Work is started, but cross sections will still be taken both before and after the dredging is done.	As specified	
	Dredging will be paid for only when a specific item for it is included in the Proposal and payment will then be made only for material actually removed. Under these conditions Dredging will be paid for on the basis of the Contract Unit Price per cu. yd. This price shall be full compensation for all labor, equipment, dredge, scow, pipe lines and material necessary to complete the Work and no additional compensation will be allowed for any incidentals such as obtaining necessary permits, complying with applicable laws and regulations, removing material or obstructions projecting within the neat lines, protecting submerged or visible structures within or adjacent to dredged areas, etc. Over dredging will be paid for up to, but not beyond, a specified distance outside of the limits of the typical cross section as shown on the plans.	CY	UP
	When it is specified or agreed that payment is to be on the basis of scow measurement, over dredging will be paid for only to the limits noted above. The volume of any over dredging beyond these limits will be computed by average end areas, from the cross sections of the original ground combined with cross sections of the completed Work and then, unless otherwise noted, or agreed upon, the volume of excess over dredging so computed will be increased by twenty percent (20%) to compensate for bulking in the scows, and this adjusted or increased volume will be deducted from the quantity for payment as computed from the scow measurements.		
	When the Contractor is required to furnish living quarters, subsistence, workboat, office space or any combination thereof, the payment shall be made at the lump sum price for these services.	No	LS